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Editor-in-Chief

JOSEPH FRENCH JOHNSON

Dean, New York University School of Commerce, Accounts and Finance

Associate Editors:

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INLAND TRAFFIC

BY

James
SIMON J. McLEAN, LL.B., Ph.D.

Member of the Board of Railway Commissioners for Canada

MODERN BUSINESS

VOLUME 14

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PREFACE

The incidents of the contract of carriage and the problems concerned with the rates charged for railway services have developed a large body of regulative enactments. Transportation is a fundamental factor in modern life. This volume on "Inland Traffic" is concerned with an analysis and explanation of some of the more important phases of Canada's transportation mechanism; the central position being given to railway transportation.

Many important problems of public policy arise out of the relation of the transportation mechanism to the public. But the limitation of scope of this book precludes other than incidental references to them. The treatise is primarily concerned with the practical working as affecting business.

An outline sketch of historical development is given to make clearer the setting of the Canadian traffic situation. The development of Canada's transportation facilities is of interest both to the student of beginnings and to the student of present day problems. At every step, it is a study of Canada in the making.

Governmental aid has been extended to railway construction with a view to developing settlement and expanding trade. There has also been government

aid and construction of railways, intended as bonds to tie together the scattered portions of Canada. The policy of railway subsidizing by governmental bodies began when private funds of capital in Canada were practically non-existent. What began as a necessity has continued as a habit.

Under the stimulus of governmental aid, there has been a rapid and undisciplined railway expansion. Today the most important practical transportation problem facing Canada is the development of its highways. By their improvement and the consequent lowered costs of transportation, new areas will be linked up to the railways, thereby permitting them to be more efficiently utilized than at present.

S. J. McLEAN.

Ottawa, Canada.

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INLAND TRAFFIC

CHAPTER I

CANADIAN TRANSPORTATION

1. *Early waterways.*—In the early days of industry and commerce, waterways are all-important. In a new country, such as Canada, one finds in the history of its settlement that influence of waterways which on account of the lapse of time is more masked in older lands. In Nova Scotia, the extensive coast line and the numerous rivers determined the settlement. In Nova Scotia, as in England, it is difficult to find any point more than forty miles from the sea. This made the sea an important element both in the settlement and in the trade of Nova Scotia. In New Brunswick, the coast lines of the Bay of Fundy, the Bay Chaleur and the Gulf of St. Lawrence, and the course of the river St. John cooperated in determining where settlement should be. As late as the middle of the nineteenth century, New Brunswick was divided into long lines of settlement along the watercourses with tracts of wilderness between, which were traversed at rare intervals by roads leading from one line of settlement to another. It was natural that lumbering and its auxiliary industries should first attract attention.

In the colonies of Upper and Lower Canada, the St. Lawrence and the Great Lakes were from an early date an important factor in settlement. Today the white-walled villages of Quebec, which line the St. Lawrence in almost continuous formation, while in part due to the French-Canadian system of subdivision of property, are also a reminder of the time when the river was the only highway. As Parkman said, "One could have seen nearly every house in Canada by paddling a canoe up the St. Lawrence and the Richelieu."

The activity of the fur trader and the zeal of the missionary opened up the route to the Upper Lakes, by way of the Ottawa River, Lake Nipissing and Georgian Bay, which was an old warpath route of the Iroquois. The direction of French settlement and trade in Canada was fashioned by the location of the Ottawa and of the St. Lawrence.

With the settlement of the United Empire Loyalists in Upper Canada, the St. Lawrence and Lake Ontario obtained an added importance. Gradually settlement filled in the shadowy outlines between Kingston and Lake St. Clair. The trade importance of the lake and river route was early recognized and plans for the construction of canals around the impeded sections of the St. Lawrence were developed. Merritt saw that the construction of the Welland Canal would make the route from Lake Ontario to Lake Huron one. The Lachine Canal, the other St. Lawrence canals, the Ottawa canals, the Rideau canals all bear on the position which was taken by Colonel By in 1820

when he stated that the construction of an improved waterway from the Upper Lakes by way of the St. Lawrence to the sea would attract the growing trade of the western territory of the United States to a Canadian route, thereby assisting in building up the Canadian towns along that route and increasing the shipping and export trade of Canada.

2. *Improved highways.*—While the waterways facilitated settlement and permitted lumbering to be carried on, the development of agriculture was dependent upon improved roads. Roads were necessary if the country was to have width instead of mere length. Roads were necessary if there was to be any adequate organization of government. One of the first acts of the first Parliament of Upper Canada was concerned with highways. Soon the policy of constructing "Grand Trunk" roads was undertaken. In Upper Canada, Yonge Street leading from Toronto to Lake Simcoe, the Dundas Road and the Talbot Road were undertaken. A similar policy of constructing Grand Trunk roads was undertaken in the maritime provinces. By 1835, New Brunswick had roads radiating from St. John to Miramichi, St. Andrews and Fredericton. In Lower Canada roads were constructed to connect with the United States frontier.

The improved highways played their part in the development of trade. With the opening up of Yonge Street, the North West Fur Company diverted its cargoes from the Ottawa to the St. Lawrence, Lake

Ontario, and this new highway. The importance of this early stage in the transit trade across Canada is seen in the fact that British goods which thus found their way to Mackinaw were thence distributed as far south as the Spanish settlements at the mouth of the Mississippi.

While the construction of plank roads in the County of York in Upper Canada increased the values of the lands located along them 50 per cent, the disadvantages of the existing system of transportation were seen in the prices of agricultural commodities. Near St. Thomas, at one time, eighteen bushels of wheat were exchanged for a barrel of salt, while one bushel of wheat was given for a yard of cotton. The dependence of Montreal on water communication and winter roads was such that as late as 1851 the cost of food and fuel doubled while the ice was forming on the river. The movement of freight was slow and expensive. From the townships of Innisfil and Vespra, it cost 7½d. per bushel to convey wheat to Lake Ontario. From Laprairie to St. Johns, a distance of fourteen miles, it took a day to haul three barrels of ashes in a cart drawn by two horses. Stage-coach movement had equal draw-backs. Between Montreal and St. Hyacinthe, a distance of thirty miles, it took a stage-coach twelve to fifteen hours in the fall and spring to make the journey.

3. *The first railroads.*—Agitation in favor of railroads began as early as 1824. At this early period two projects engaged public attention, one for a line

from Quebec to St. Andrews, New Brunswick, the other from Montreal to Lake Champlain. The first project went no further than a survey, and further progress was stopped by the dispute over the boundary between New Brunswick and Maine as the line ran thru the area in controversy. The second project resulted in the formation of the Champlain and St. Lawrence Railroad. Work was begun but operations were slow. In 1852 this road had a length of 49 miles.

After the Rebellion of 1837 the maritime provinces were occupied chiefly in the building of small roads designed as parts of a system linking up the seaboard provinces with interior Canada and with the United States. Before the formation of the Dominion these provinces had taken an active part in railway construction, and 341 miles of road had been built. Some stretches of road had been built by the government and some of the roads had been operated by the government. But this system had broken down and in 1864 all the roads were in private hands.

4. *Upper and Lower Canada.*—As elsewhere the beginnings of the railroad systems of the interior provinces were fragmentary. Upper Canada was at the outset more lavish in granting charters than Lower Canada. In its desire to open up the agricultural district between Lake Erie and Lake Huron, Upper Canada had as early as 1837 granted charters to no less than three parallel lines.

There were fifty-four miles of railroad in existence

in 1849 when by the Guarantee Act the government undertook to guarantee interest on the bonds of railroad companies. This encouragement was not to be extended to any railroad less than seventy miles in length. The outgrowth of this legislation was the comparatively early appearance of two systems which dominated the railway field.

The Great Western was opened in January, 1854, altho there still remained considerable work to be done in cutting and in ballasting. In the previous year the road had a projected mileage of 311 miles of which 235 miles were under construction. The latter included routes from Hamilton to London, London to Detroit, Hamilton to the Niagara River and Junction to Galt.

More ambitious were the plans of the Grand Trunk whose prospectus was issued in 1853. The first section of the road from Montreal to Brockville, 125 miles, was completed in November, 1855. The first thru train between Montreal and Toronto made the journey on October 27, 1856.

5. Period of great railway development.—This great railway activity in Upper Canada took place in a period of great commercial activity. Altho some of the projects were not completed before 1860, the bulk of the construction was over by 1856. The immediate effect of this cessation was disastrous. The payments of railway contractors had habituated people to a free flow of money; now came restriction at a time when the Province had been rapidly increasing

its expenditures. In 1854 there was a surplus of \$3,000,000; in 1858, a deficit of \$3,750,000. The Crimean War had raised prices. The changed conditions coupled with the bad harvest pressed with especial rigor on the farmers.

Speculative conditions had detrimentally affected the Grand Trunk from the outset. Construction costs had increased and sufficient care had not always been taken in construction work. The mistakes of construction had been in part inevitable in construction under new and untried conditions. The Grand Trunk had also to meet a wasteful and ruinous competition from the Great Western which paralleled its route for a distance of 230 miles. Furthermore, the Grand Trunk had water competition to face. When the main line was surveyed the route chosen lay near the leading water-courses. It soon developed that the railway could not compete successfully with water carriers. Between Montreal and Quebec it was admittedly impossible for the railway to compete for heavy traffic which was carried by water a distance of 180 miles at \$1.00 a ton.

6. *Government loans Grand Trunk.*—The first issue of the stock of the Grand Trunk had been subscribed twice over. By 1855, however, the road found that it could not obtain money except at ruinous discounts. The government loaned the railway £900,000 and, in 1856, postponed its lien for grants already made until certain bonds had been issued for improvements. In the next year, the government again post-

poned the lien until a six per cent dividend on common stock was earned.

7. *Other railway construction.*—During the period between 1849 and 1867, in addition to the railways already referred to, there were sixteen others constructed. A comparison of the completed railway mileage for two of the years within this period, 1853 and 1860, shows the rapid growth which was attained. In the former year the completed mileage was 205 miles, as against 1895 miles in the later year. Of the mileage of 1860 the Grand Trunk had the largest share, 830 miles, followed by the Great Western with 331 miles.

In 1867, the year of Confederation, the different colonies now grouped under the name of Canada had 2529 miles of railway which had cost in round numbers \$160,000,000. Of this sum the different colonies had contributed approximately 37 per cent.

8. *Intercolonial Railway.*—The establishment of the Dominion in 1867 brought new factors into the railway field. Despite early discouragements the maritime provinces had not given up the effort to secure rail connection with the more inland provinces. It was their hope to make Halifax the chief port of Canada. During the earlier period of its history the Intercolonial Railway was known as the Halifax and Quebec. The aid of the Imperial Government had been sought for the project and a guarantee had been extended.

The maritime provinces insisted as a condition of

their entrance into the Confederation that the railway should be constructed at the expense of the New Dominion, and this insistence found its acceptance in the Quebec Resolutions of 1864, which became the basis of the British North America Act. This act provided in section 145:

Inasmuch as the Provinces of Canada, Nova Scotia and New Brunswick have joined in a Declaration that the Construction of the Intercolonial Railway is essential to the Consolidation of the Union of British North America and to the Assent thereto of Nova Scotia and New Brunswick and have consequently agreed that Provision should be made for its immediate Construction by the Government of Canada: Therefore, in order to give effect to that Agreement, it shall be the Duty of the Government and Parliament of Canada to provide for the Commencement within Six Months after the Union of a Railway connecting the St. Lawrence with the City of Halifax in Nova Scotia, and for the Construction thereof without intermission, and the Completion thereof with all practicable Speed.

9. *Construction and operation.*—The road was assisted from the proceeds of a Dominion loan guaranteed by the Imperial Government. The choice was open of a line along the boundary of the United States or a more northerly and more circuitous one. For political and military reasons the longer route was chosen.

Railways previously constructed at government cost in the maritime provinces, which were constituent parts of the system, were declared to be the property of the Dominion. Construction work was completed in 1876 and at that time 714 miles were in operation

which had been constructed at a cost of \$34,363,896. By the acquisition in 1879 of the Riviere du Loup extension of the Grand Trunk, the Intercolonial obtained a western terminus at Chaudiere Junction. By leases and by traffic agreements it obtained in 1898 entrance into Montreal.

While the Intercolonial showed a deficit for the fiscal year 1915, there has been a distinct improvement in its condition in 1916. The government railroads have never paid the interest on the investment. The system was built as a political work and any attempt to put it on a basis of reasonably remunerative rates has evoked reference to its origin. It has the disadvantage of a circuitous route, 248 miles longer between Montreal and St. John, than the Canadian Pacific.

10. *Comparison of Grand Trunk with Great Western Railway.*—As the two important railroads in the Canadas, both the Grand Trunk and the Great Western were competitors for the transit trade across the western peninsula of Upper Canada between the eastern and western States. The Great Western was the more favorably located, since the Grand Trunk had, in addition to its line in this section, a line in the East which produced very little business. From Toronto to Quebec the Grand Trunk paralleled Lake Ontario and the St. Lawrence River, which subjected it to a keen water competition. East of Quebec the line ran thru very lean territory. One of the earliest difficulties the Grand Trunk had to face was to obtain freight for the westbound cars. Altho the

Grand Trunk had four times the mileage of the Great Western a large part of its tributary country was poor. A comparison of the net earnings of the two railways in 1867, after deducting operating expenses shows the net for the Grand Trunk as \$1715 per mile, while in the case of the Great Western it was \$4360.

11. *Grand Trunk absorbs Great Western.*—From time to time attempts were made to lessen competition between the Grand Trunk and the Great Western by agreements of various kinds. These were made only to be broken. Amalgamation was attempted in 1876 without success, and in 1877 an agreement for the maintenance of rates was reached. They finally entered into an amalgamation in 1883, after another road had sought to make the Great Western part of a thru line.

12. *Grand Trunk acquires other lines.*—At the beginning of 1884 the Grand Trunk acquired control of the Midland which gave it a connection between the upper and lower Lakes. It was expected that this would give, in combination with the Grand Trunk, the shortest route from the upper Lakes to Montreal and the Atlantic. Some four years later the Grand Trunk acquired control of the Hamilton and North Western, and the Northern, the joint system embracing 493 miles. As a result of construction and acquisition between 1881 and 1890 practically all railway mileage in Ontario, with the exception of that controlled by American interest, was subdivided between the Grand Trunk and the Canadian Pacific.

13. *Transcontinental line.*—The next step in Canadian railway history grew out of the demand for a transcontinental line. Such a line had been projected at a very early date, but actual construction was delayed until 1872. In the previous year British Columbia had entered the Confederation, and as a condition of so doing had insisted upon the building of a transcontinental railway.

Backed by the prospect of a land grant of 50,000,000 acres and a cash subsidy of \$30,000,000, construction was begun as a private work in 1872. The Imperial Government had guaranteed interest at four per cent on a loan in aid of the Canadian Pacific and the improvement of the Canadian canals. The construction of the work proceeded slowly during a period of industrial depression. Political changes made the outcome of the work problematical. Further efforts were made to obtain credit from the Imperial government. Failing in this appeal an endeavor was made to have the Grand Trunk undertake the work, but without success.

14. *Canadian Pacific to build and operate line.*—The government was successful in 1880 in making an arrangement with the Canadian Pacific syndicate to construct and to operate the line. The syndicate undertook to complete the work in ten years from the date of contract. The Company was to receive \$25,000,000 in cash and 25,000,000 acres of land in the Northwest. The railway and its capital were to be exempt from taxation—dominion, provincial and

municipal. The land grant was to be free from taxation for twenty years from the time of the grant by the Crown. In addition, the Government gave the 713 miles of railway which were in part constructed and in part under contract.

The new company was incorporated on the 17th of February, 1881. Construction work began in June of the same year; the last line was laid November 7, 1885; and the line opened for thru traffic on June 28, 1886. The railway was thus constructed in one half the time stipulated in the agreement.

15. *Eastern connections.*—The original charter provided for a road from Callander near Lake Nipissing to the Pacific coast. It authorized the company to obtain a connection with the city of Ottawa thru the acquisition of the Canada Central Railway and also empowered it to "hold and operate a line or lines of railway from the city of Ottawa to any point at navigable water on the Atlantic seaboard, or to any intermediate point, or it may acquire running powers over any railway now constructed between Ottawa and any such point."

Before actual operations began, the Canada Central and some other lines had been acquired. Friction with the Grand Trunk soon developed. The latter charged that the Canadian Pacific was departing from the original plan and entering into competition with the Grand Trunk. The position of the Canadian Pacific was, that had it rested with the completion of its main line across the continent, the enterprise would

have existed "only as a sickly appendage of the Grand Trunk." The opposition of the Grand Trunk availed nothing to prevent the gradual expansion of the Canadian Pacific in eastern Canada.

16. *Monopoly clause in Canadian Pacific charter.*—The policy of the Canadian Pacific, according to Sir John A. Macdonald, in discussing the charter of the railway, was to confine trade to the Canadian side of the border and to build up Montreal, Quebec, Toronto, Halifax and St. John by means of one Canadian line. To this end there was included a monopoly clause in the legislation which provided in substance that to preclude the traffic of the Northwest from being tapped by American carriers for twenty years after the enactment of the charter legislation, no railway should be chartered within fifteen miles of the international boundary. And the government undertook to maintain this prohibition within the period stated in the case of any provinces created in the future in the Northwest.

17. *Traffic facilities for western wheat areas.*—The wheat-belt of the Canadian Northwest begins about 400 miles further west than the eastern limit of the wheat-belt of the American Northwest. Comparatively little local traffic offers between Winnipeg and Fort William. The Canadian Pacific line around the head of Lake Superior is essentially a traffic bridge. It is gradually being double-tracked, which will enhance its haulage capacity. With its single-line fa-

cilities, it handles between the close and the opening of navigation as much as the lake boats handle in ten days. The expansion of the wheat area of the West intensified the demand for increased outlet to the East.

The development of mining activity in Southern British Columbia led to the subsidizing, in 1897, of the Crow's Nest Pass extension of the Canadian Pacific. This line was granted a subsidy of \$11,000 per mile to construct a railway from Lethbridge to Nelson, a distance of 330 miles, thus affording a connection with the Kootenay Lakes.

18. *Subsidy provisions for Canadian Pacific.*—It was part of the subsidy agreement with the Canadian Pacific that the rates on this line should be subject to the revision of any regulative tribunal thereafter created. When the Canadian Pacific was chartered, the general railway law contained a provision that rates might be regulated by Parliament, but so as to produce a return of not less than 15 per cent on the capital actually expended. In the Canadian Pacific charter, 10 per cent was set as the minimum, this was represented as an extension of the regulative power of Parliament. However, in the revision of the Railway Act of 1888, the 15 per cent clause was struck out and the 10 per cent clause remained in the Canadian Pacific charter, thus exempting its rates from reduction until this figure was reached. It was now made a condition of the subsidy that reductions

of from 10 per cent to $33\frac{1}{3}$ per cent should be made on specified commodities moving over the main line of the Canadian Pacific.

19. *The MacKenzie and Mann railways.*—In Manitoba, the abrogation, in 1888, of the “monopoly” clause had been followed by the entrance of the Northern Pacific into Winnipeg, rate concessions also being obtained. The desire for a lower rate to the Lakes remained unsatisfied. In 1896, MacKenzie and Mann obtained the charter of the Lake Manitoba Railway and Canal Company, a line which had been chartered in 1889 and which had been voted a land grant by the Dominion. They now acquired in quick succession the charters of the Winnipeg and Hudson’s Bay, the Manitoba and the South Eastern, the Ontario and Rainy River, and the Port Arthur, Duluth and Western. In 1898, the Greenway administration, which had thought of obtaining an independent outlet from Manitoba to Duluth, decided to assist by a bond guarantee the MacKenzie and Mann line to Port Arthur. The consolidation of these different properties now created the Canadian Northern System.

20. *Canadian Northern acquires Northern Pacific Lines in Manitoba.*—In 1901, the Manitoba government took over on a 999-year lease, at a payment of \$300,000 a year, the 354 miles of the Northern Pacific within Manitoba. Thereafter, these lines were turned over to the Canadian Northern which assumed the

burdens under the lease. The government now guaranteed interest on the bonds of the Canadian Northern between Winnipeg and Port Arthur. The Canadian Northern engaged to give reductions amounting to 15 per cent of its tariff rates then in force on articles other than grain, from and to points in Manitoba to Fort William and Port Arthur. Provision was also made for a 10-cent rate on grain from Winnipeg to Port Arthur. The Canadian Northern from Port Arthur was completed in February, 1902, and in April of the same year the reduced rates were put in effect.

The acquisition of the Northern Pacific lines in Manitoba increased the Canadian Northern mileage to 1240 miles. By 1903, its lines had crossed out of Manitoba into the Northwest territories. It has been successful in enlisting the aid both of the Dominion and of the Provinces. In British Columbia, it has constructed its line under a British Columbia charter, the line being known as the Canadian Northern Pacific.

21. *The Grand Trunk Pacific project.*—On November 3, 1902, the Grand Trunk brought before the Dominion government a proposition for the construction of a line of railway from North Bay on the Grand Trunk system in Ontario, to the Pacific Coast, at or near Port Simpson. It was stated that a second transcontinental railway was necessary in order to handle the expanding business of the Northwest and

prevent its deflection to American channels. A government grant of \$6,400 and 5,000 acres of land per mile were asked for.

22. *Terms of the charter.*—In 1903, charter legislation was enacted. In this legislation, there were essential modifications of the original proposition. Instead of providing for an eastern terminus at North Bay, access to the Canadian seaboard being obtained therefrom by means of the lines of the Grand Trunk and the Intercolonial, it was now provided that the line was to be continued east from Winnipeg to Moncton, New Brunswick. From Winnipeg to the Pacific Coast, the Grand Trunk Pacific was to build the line. From Winnipeg to Moncton, it was to be built as a government work, under the name of the National Transcontinental. The government undertook to guarantee interest on bonds to 75 per cent of the cost of construction, but not exceeding \$13,000 per mile on the prairie section and \$30,000 on the mountain section. The section known as the National Transcontinental was to be leased on completion to the Grand Trunk for a period of fifty years; the first seven years being rent-free; three per cent per annum on the cost of the work being paid as rental during the balance of the time. The government reserved the right to grant running rights over either or both sections. The Company agreed that all freight originating on the line of railway or its branches, not otherwise specifically routed by the shipper, should, when destined for points in Canada, be carried entirely thru Canadian

territory; that the thru rate on export traffic from the point of origin to the point of destination via Canadian ports was not to exceed that contemporaneously in force by the United States ports; and that such traffic not otherwise specifically routed by the shipper was to be carried to Canadian ocean ports.

The terms contained in the legislation of 1903 were regarded by the Grand Trunk management as too onerous considering the condition of the money market at that time. A re-arrangement of terms was made early in 1904. The essential modification was that in the case of the bond guarantee on the mountain section, the maximum limit of \$30,000 was removed, the government now being liable for a bond guarantee up to three-fourths of the cost.

23. *Grand Trunk shareholders dissatisfied.*—Altho the shareholders of the Grand Trunk were assured by Sir Charles Rivers Wilson that “the Grand Trunk will be in the very foremost rank for securing itself an ample participation in the rich traffic both eastbound and westbound which will be derived from the cultivation of this vast area and the requirements of its constantly growing population,” there was a strong feeling among them that the government had not been sufficiently generous; and it was not without difficulty that their acquiescence was obtained.

24. *Grand Trunk Pacific becomes political issue.*—In the general election of 1904, in which the Liberals were successful, the issue was the government policy in regard to the Grand Trunk Pacific. The Con-

servative leader reaffirmed his belief in the necessity of government ownership, stating that the people still had power to rescind the bargain, and that if popular sanction was given to the agreement it would postpone government ownership for a century. The guarantees of an all-Canadian route were attacked as illusory. The Liberal Leader said the route to the seaboard was necessary to make Canada independent of American lines. He affirmed the necessity of private ownership, pointing out the greater elasticity of private ownership in the matter of development of traffic, and summed up his position—"Governments can build railways—I have no fault to find with that—but governments cannot operate railways."

25. *Government operation.*—As a result of the adverse fortunes of the Grand Trunk Pacific, the National Transcontinental is at present operated by the Dominion government. It extends from Moncton to Winnipeg, embracing a mileage of 1,993 miles, which have cost \$152,802,746, or an average of \$76,632 per mile. For the fiscal year ending June, 1915, it had gross earnings amounting to 0.2 per cent on the capital cost; the operating ratio was 127.13 per cent.

26. *Other systems.*—Since 1899, the Great Northern system has built up a mileage in Canada of approximately 500 miles. When the Crow's Nest Railway was chartered, there was a strong desire in British Columbia for a railway direct from the Kootenay to the coast, which would not only tap the mineral resources of the Kootenays but also develop the country

west of this to the Pacific coast. It was in the late nineties that James J. Hill began to appreciate the growing trade of British Columbia. In the endeavor to obtain an entry into Vancouver, the charter of the Vancouver, Victoria and Eastern was obtained; and by means of this and other controlled lines, an entrance was made. Progress east from Vancouver by way of the Hope Mountains has been slow. Its construction in British Columbia has been effected by the building of short links connecting with the Hill system in the United States. These lines also extend into Manitoba, to Brandon and to Winnipeg.

The Province of Ontario owns and operates the Temiscaming and Northern Ontario, which extends from North Bay to a junction with the National Transcontinental at Cochrane. This system has now a mileage of 329 miles and was built at a cost of twenty million dollars.

REVIEW

Why was Upper Canada more lavish in granting railroad charters than Lower Canada?

State the circumstances which led up to the absorption of the Grand Trunk by the Great Western.

When was the first transcontinental line in Canada projected, when started and by whom built? What part did the Dominion play in its construction?

What was the Monopoly Clause in the Canadian Pacific charter? What subsidy provisions did this railroad obtain?

Discuss the Grand Trunk Pacific project. What were the salient points in the charter granted to this road? How were they regarded by the stockholders?

CHAPTER II

THE GOVERNMENT AND THE RAILWAYS

1. *Railway control*.—The British North American Act gives jurisdiction over railroads situated entirely within one province to that province. All other roads are chartered and controlled by the Dominion government, and the latter also has the right to declare any railroad located entirely within another province to be under Dominion control, because the railroad is for the “general advantage of Canada.”

There has been an increasing tendency to expand the significance of the phrase “for the general advantage of Canada,” and many purely local roads have been granted Dominion charters. Jealousy between the Provincial governments and the Dominion government has created some friction in railway affairs, but the tendency of new enterprises is to obtain, if possible a Dominion charter because it is believed to give them a better standing in the markets of the world.

2. *Government aid*.—There is scarcely any form of government aid to railway construction which has not been tried in Canada. Bonds have been guaranteed by municipalities, by provinces, by the Dominion and the Imperial governments. Railroads have been

constructed directly by the Provincial and Dominion governments, at public expense. Expensive land grants have been made to new roads, and liberal subsidies in cash have been granted. Loans have been made to the railroads to facilitate the work of construction, or to help them out of difficulties of operation.

3. *Government advances to railways.*—We have already mentioned the advances made by the government in aid of the Grand Trunk and Great Western. The Grand Trunk still remains a debtor to Canada for the entire amount of the advances made to it. By an act of 1884, the government's claim was placed after the common stock and securities of the company. No interest has been charged against the company since 1867. The Great Western's obligations were settled in 1868 by approximately 85 per cent of the total indebtedness.

In 1883, the Canadian Pacific found itself in financial difficulties. Of the one hundred millions of capital authorized, fifty-five millions had been issued; and in the depressed condition of the money market, stock could not be disposed of at any remunerative price. It was therefore determined to deposit a sum with the government to guarantee the payment of dividends for ten years on \$65,000,000 of stock and in this way enhance the value of the stock. Towards the fund the government loaned \$7,390,912. In 1884, a further temporary loan of \$22,500,000 was made to the company, while in the following year there was a

loan of \$5,000,000. The most recent phase of the situation is the aid given to the Grand Trunk Pacific and the Canadian Northern in 1916. The Grand Trunk Pacific received a loan of \$8,000,000, repayable on demand and bearing interest at six per cent. This was to be used for expenditure made, or to meet indebtedness incurred in paying interest upon the securities of the company, to meet deficit in operation and for the purchase of rolling stock. The loan is secured by a mortgage on the undertaking. The disposition of the loan is subject to the direction of the Governor-in-council. The assistance given to the Canadian Northern was in the form of a demand loan of \$15,000,000 bearing interest at six per cent, and secured by a mortgage on the undertaking of the Canadian Northern. It is subject to similar supervision.

4. *Subsidies.*—The details of the subsidy assistance to the Canadian Pacific have been stated already. In 1882, a new phase of the subsidy policy developed. In entering Confederation, each province surrendered authorized powers in regard to taxation it had hitherto exercised. They were unable therefore to give the same attention to the development of railways, and demanded that the Dominion government grant subsidies to aid in railway development. It had hitherto been understood that the subsidy policy was reserved for the main trunk lines uniting different provinces. In 1882, without it being stated that the work to be aided was for the general interests of

Canada, a grant of \$3,200 per mile was made to various intra-provincial lines.

In 1897 a modification of the cash subsidy policy was made whereby the normal rate of \$3,200 per mile was to be granted when the road cost less than \$15,000 per mile, and when the cost was in excess of this figure there might be an additional subsidy equal to 50 per cent of the excess, but not exceeding a total sum of \$6,400 per mile.

5. *Railway construction under new subsidy policy of 1882.*—In the majority of the railways constructed under the new subsidy policy, practically all the cash that went into the enterprise was obtained from the subsidies and the bonds. Often the terms of a contract have been that the contractor shall take the Dominion, provincial and municipal subsidies and some percentage of the bonds. Sometimes a portion of the stock has been thrown in as “sweetening.” Of the examples available, two will serve. In 1886, a contractor undertook to build 100 miles of the Baie des Chaleurs for \$20,000 a mile. He was to receive subsidies amounting to \$6,400 a mile, \$13,600 a mile of first mortgage bonds, and one-half the capital stock. In 1890, an investigating committee of the Legislature of Quebec said this company had relied entirely “on the money to be obtained from the government and the municipal corporations to carry on their enterprise.” This road, which had been chartered by the Province of Quebec in 1872, had received from the Dominion and the Province of Quebec \$1,474,800 in

aid of 100 miles of railway. In 1896, the company on account of the difficulties in which it found itself, proposed to transfer the railway to the Dominion government. The government operated it from December, 1896 to May, 1897. During this period, the running expenses exceeded the receipts by 200 per cent. The construction contract of the Brockville, Westport and Sault Ste. Marie called for subsidies of \$25,000 per mile in stock and \$25,000 in bonds.

The attitude of the Dominion, which was shared by the Provinces, was that the granting of a subsidy to such a railway as has been spoken of was not to be considered as the expression of an official opinion with reference to the probable success of a railway. For the bondholder, the rule was to be *caveat emptor*. But governments cannot so lightly escape the consequences of their acts. The careless granting of aid hurt Canadian credit. While the government did not concern itself with the raising of the remaining portion of the necessary capital, the English bondholder regarded the government as a partner in the enterprise, not as a careless distributor of largesse. The plaint, in 1889, of a bondholder of the Caraqueet Railway presents the bondholder's point of view—"We surely had a right to assume that in making a free gift of nearly £80,000 towards the construction of the line, the Dominion and New Brunswick governments were satisfied with its importance and would see that the money was properly and judiciously expended. . . ."

6. *Land grants, subsidies and loans.*—Earlier history shows that there had been a cooperation of land subsidies and cash payments outright. The Dominion has not made any land grants since 1894. While Ontario has made a land grant in aid of the Canadian Northern, as well as of the Algoma Central, the land grant system no longer possesses public favor. The following table gives a summary of the land grants made:

	Acres
Dominion	31,864,074
Quebec	1,514,013
British Columbia.....	8,119,221
New Brunswick.....	1,647,772
Nova Scotia.....	160,000
Ontario	624,232
Total	43,929,312

The figure shown for Quebec is a net figure. The total grant was in excess of 23,000,000 acres. Part of this has been taken back by the government as a cash payment per acre; part has lapsed. There remains the figure given in the table.

The cash subsidies and loans which have been paid are:

Dominion	\$183,479,192
Ontario	9,669,236
Quebec	12,333,196
Nova Scotia	6,987,849
New Brunswick.....	4,907,486
British Columbia.....	1,284,572
Manitoba	2,878,887
Municipalities	17,914,836
Total	\$239,455,254

7. *Bond guarantees.*—Reference has been made to the policy of bond guarantees of which extensive use has been made since 1897, not only by the Dominion but also by the provinces. In the period 1911 to 1914, the total amount of guarantees authorized increased from \$148,000,000 to \$409,000,000. A summary of the situation as of June 30, 1915, is presented in the following table:

	Authorized	Bonds executed	Guarantee carried
Dominion	\$188,965,063	\$174,740,856	\$160,516,649
Manitoba	25,221,580	25,221,580	25,221,580
Alberta	59,410,450	43,800,450	27,333,499
Saskatchewan	41,625,000	23,762,960	22,936,950
Ontario	7,860,000	7,860,000	7,860,000
British Columbia	80,332,072	68,782,072	24,575,020
New Brunswick	6,063,000	6,063,000	4,806,965
Quebec	392,000	392,000	392,000
Total	\$409,869,165	\$350,622,918	\$273,642,663

The authorized guarantees represent a contingent obligation of \$50 per capita.

8. *Rate regulation.*—In the early days, the Canadian provinces were concerned with the problem of how to obtain rapid development, and while railway legislation contained provisions dealing with regulation, these provisions attracted little attention. In 1851, the Railway Clauses Consolidation Act provided that tolls were to be fixed by the directors subject to the approval of the governor-in-council, and that there were to be no preferences. It was ten years later before the interest in rate regulation became more concrete. The Grand Trunk, in the development of its system, had become a competitor for

United States business. Flour was shipped by rail from Chicago to Portland and thence by boat to Boston. The rate basis was low. In Upper Canada there were complaints that local rates were unduly high, as compared with these thru rates. Rates west-bound from Montreal were low as compared with rates eastbound from Toronto, and this was deemed to the advantage of Montreal.

The interest in rate questions continued and was intensified between 1880 and 1890 by the railway amalgamations in Ontario. The old belief of efficiency in competition as a regulator of rates was shattered.

9. *Legislation.*—During this period, continued efforts were made to secure legislation regulating railway rates. It was not until 1888 that the authority to supervise rates was based in the railway committee of the Privy Council, a committee composed of designated members of the cabinet presided over by the Minister of Railways and Canals. Provision was made for uniform classification. Rebates and other forms of discrimination were prohibited. Complaints arising with reference to rates were to be dealt with by the railway committee.

10. *Report and investigation.*—The question of the appointment of a special regulative tribunal came up again in 1896. In 1899, by the direction of the Minister of Railways and Canals, a special report on the operation of railway commissioners in England and in the United States was prepared by the writer. In 1901, the writer was appointed a special commissioner

to investigate the existing conditions in regard to rate grievances in Canada.

11. *Report on rate grievances.*—The report of the investigation so conducted found that making all allowances for differences in conditions, many non-competitive rates were excessive as compared with competitive rates. Great dilatoriness had been shown in the settlement of claims. Under the Railway Act, subject to the outside limit fixed by the maxima, rates might be varied at will. The class rates of the railways were within these maxima. The railways had exercised the right to vary these without notice. Disturbance to industry had thus been caused. Sudden changes in rates had sometimes inflicted losses on individuals. In cases where notice had been given, this had been done as a matter of courtesy, not of obligation. In the creation of commodity rates there had been lack of principle. The rates had in many cases been granted simply on the continued urgency of the shippers affected. There were constant complaints regarding minimum weights. It was complained that rates on American shipments into Canada had been so arranged as to offset the geographical advantages of Canadian producers. Rates on short distance traffic had been so high that commodities had to be moved by wagon. There was disproportion, in many cases, between the carload and less-than-carload rates.

It was recognized that the organization of the Railway Committee put difficulties in the way of the effective control of rate matters. The Royal Commis-

sion of 1886 recommended that the process of the committee should be supplemented by appointed officers who should, on the direction of the committee, look into and report on rate grievances as they arose in the different sections of the country. This suggestion was not acted upon. In consequence, all questions which arose had to be dealt with before the Railway Committee in Ottawa. When a complaint arose in some locality at a distance from the seat of government, the distance to be traveled and the expense involved were serious obstacles in the way of an effective remedy.

12. *Dual functions of committee.*—Another difficulty had faced the committee. It had dual functions—administrative and political. Its members were primarily concerned with political functions. For the most part, they came to the deliberations of the committee with little prior technical knowledge concerning the principles of railway regulation. The Minister of Railways and Canals was chairman of the committee. In matters of importance, the committee did not feel free to go on when he was absent. In fact, he was the committee. When there was a Minister of Railways who took a keen interest in the matters, the committee was active; otherwise not. The duality of function of the members of the committee—each member being head of a department—and the lack of continuity of tenure, on account of the exigencies of politics, prevented the development of a consecutive policy.

13. *Report recommended Railway Commission.*—The report, after reviewing the complaints, concluded that the nature of the Railway Committee and the fact that it was not a migratory body, prevented its looking after rate matters in the fullest way; and it recommended the appointment of a special Railway Commission as essential to a more efficient regulation.

14. *Board of Railway Commissioners created.*—The Board of Railway Commissioners for Canada was constituted under the Railway Act as amended in 1903, which became operative February 1, 1904. As organized, the Board had a membership of three—a Chief Commissioner, a Deputy Chief Commissioner and a Commissioner. In 1908, there was a reorganization providing for six members—Chief Commissioner, Assistant Chief Commissioner, Deputy Chief Commissioner and three Commissioners. The qualifications of the Chief Commissioner are that he is or has been a Judge of a Superior Court of Canada, or of any Province of Canada, or that he is a barrister or advocate of at least ten years standing at the Bar of any such Province. The qualifications of the Assistant Commissioner are the same as those of the Commissioner. The qualifications for Deputy Chief Commissioner are not specified. The Commissioners are appointed for a term of ten years and may be re-appointed. The age limit is seventy-five years.

15. *Power of Board over location, construction and operation.*—The Board possesses extensive powers in regard to location, construction and operation of rail-

ways. It approves location plans before construction begins, grants leave to cross highways or railways, and fixes the protection, if any, at such crossings. In the case of railways constructed before 1909, the cost of protection at crossings, following the usual practice, was divided between the municipality and the railway. The proportions in which the division was made varied with conditions. Under the legislation of 1909 any railways thereafter constructed are to be at the full expense of any protection that may be ordered by the Board.

16. *Jurisdiction over rates.*—The Board has an extensive jurisdiction in regard to rates. Passenger tariffs are divided into two classes—standard and special. Freight tariffs are divided into three classes—standard, special and competitive. All tariffs are required to be filed with the Board and provision for publication is also made. When a special tariff is reduced, three days' notice must be given. When it is increased, there must be thirty days' advance notice. Standard freight and passenger tariffs are subject to the approval of the Board. Special and competitive tariffs do not require the express sanction of the Board. The rates contained in such tariffs are lower than the standard tariff rates. The competitive tariffs deal with the tolls to or from specified points which the Board may consider, or may have declared to be competitive points not subject to the long and short-haul clause under the provisions of the act. The Board may disallow any tariff which

it considers unjust or unreasonable, and may require a company to substitute a tariff satisfactory to the Board, or it may prescribe other rates than those disallowed.

Discriminations between persons and between localities are forbidden.

In the revision of the Railway Act of 1888 the provision by which Parliament might revise rates, but not so as to reduce the return below 15 per cent on the cost, was omitted. The return in the case of the Canadian Pacific had been placed at 10 per cent, instead of 15 per cent, which left it open for the railway to plead a special contract. In 1904, the railway claimed that until the return limited on the cost was reached, the Board was without jurisdiction over its rates. The question came before the courts in 1909, but, before adjudication, the Canadian Pacific acquiesced in the Board's control over rates and the question has not been raised since.

The classification of freight is also subject to the approval of the Board.

17. *Traffic facilities and methods.*—There are wide provisions regarding the providing of reasonable and proper facilities for traffic, and requiring the interchange of traffic between railways. Companies whose railways connect may be required to agree upon joint tariffs for a continuous route over both lines; and, if they cannot agree upon the amounts of their rates and the division thereof, the Board is empowered to determine such matters.

The Board is empowered to prescribe forms of bills of lading and the conditions under which goods shall be carried, and has formally approved a uniform bill of lading for use by railway companies and shippers thruout the Dominion.

18. *Express, telegraph and telephone.*—The Act was originally concerned with railways. Regulative powers in respect of express, telegraph and telephone companies have been added. The jurisdiction in the cases so added is essentially a rate jurisdiction and is not as wide as that granted in the case of railways.

19. *Amended Act provides for grain movement.*—A far reaching amendment brought about by the Board was made in March, 1916. This invested the Board with authority when a railway company failed to provide sufficient facilities to move grain from the western provinces to the elevators at the head of Lake Superior, or beyond after the close of Lake navigation, to require any other railway company to move the grain. The rates published by the company in default should apply over joint routes so directed by the Board and be apportioned among companies as the Board might direct.

The circumstances leading to the amendment of the Act were that the transportation of a banner crop of grain in 1915 (723,000,000 bushels as against 322,000,000 bushels in 1914 and 503,000,000 bushels in 1913) almost swamped the railways. Elevators and temporary granaries were not sufficient to house the grain, and much of it had to be moved before the

spring rains of 1916 set in. The usual rule is that a company is entitled to the traffic on its own line, but no railway company could be expected to move the whole crop in any given year before the close of navigation. On the other hand, any condition of transportation which kept the western farmer from marketing his crop until the following June or July was regarded as unreasonable. The Act was therefore amended to meet the situation.

20. *Procedure.*—The Chief Commissioner presides and his opinion is final on any question which, in the opinion of the Board, is a point of law. In his absence, the Assistant Chief Commissioner takes his place; and in the absence of both, the Deputy Chief Commissioner presides. When so presiding, either of the latter has the same powers as the Chief Commissioner.

21. *Division of Board into two sections.*—The legislation of 1908 provided, as a matter of convenience, for the organization of the Board into two sections. This is not a hard-and-fast division, but simply a division of convenience; that is to say, any three Commissioners, or even two, may hold a sitting of the Board. Except in the case of sittings in Ottawa, it is not usual for more than three Commissioners to sit. The decision of the three so constituting a section is accepted as a decision of the whole Board. Further, two Commissioners constitute a quorum; consequently, if two Commissioners are agreed at the sitting of the Board as above explained, their decision

is the decision of the Board. This gives the Board a much more elastic organization. For example, it is customary to have sittings of the Board in Eastern Canada, while, at the same time, sittings are being held in Western Canada. On more than one occasion, on account of pressure of business, both sections of the Board have held sittings on the same day in Ottawa.

22. *Procedure of Board informal.*—The Board is a court of record and has an official seal. In the development of its procedure, however, it has followed somewhat informal lines. Since organization it has allowed costs in only two cases. While lawyers appear before it, the parties interested may decide whether or not they shall be represented by them. In rate cases, it is customary to have the matters in dispute presented by traffic representatives of the parties concerned. Rules of evidence are not followed so strictly as in ordinary courts.

23. *Findings of Board on law and fact.*—A finding by the Board on a question of fact is final. In determining any question of fact the Board is not bound by the previous finding or judgment of any other court. Such finding or judgment is taken by it as *prima facie* evidence only. This finality as to fact covers the Board's powers with reference to reasonableness of rates and discrimination. If there is a question of law involved in an order issued by the Board, the Board may permit the applicants to appeal to the Supreme Court. If it is believed that

the Board has exceeded its jurisdiction, the parties affected may appear before a judge of the Supreme Court, and if they make out a *prima facie* case they will be permitted by him to bring their case before the Supreme Court.

There may be an appeal both on facts and on law to the Governor-in-council. He may also, of his own motion, intervene and overrule the decision of the Board, or may refer the matter back for additional evidence which the parties may desire to submit.

24. *What the Board has accomplished.*—From February 1, 1904, to the end of November, 1916, the Board has had formal hearings in 6200 cases. The scope of many of these is wide. To refer to the matter in a summary way, the Board has authorized car-service rules, reduction of rates in Canada because of discrimination practiced in favor of American thru traffic, regulation in express and telephone rates, reduction of rates in Western Canada; and has authorized, on adequate showing, increases of rates in Eastern Canada, etc. It has, in addition, dealt with a great many individual cases of rates, under the headings of reasonableness and discrimination as well as cases affecting facilities, long distance telephone connection, train operating rules, flag station facilities, wire crossing rules, standard regulations as to locomotive boilers and their inspection, regulations as to air-brakes, hand-holds, dum ash-pans, etc.

25. *Applications and complaints.*—From the organization of the Board down to the end of Novem-

ber, 1916, some 51,000 applications have come before it. Matters submitted may be dealt with either formally in hearings or informally by investigation, report or correspondence. The informal procedure predominates. On an average, 85 per cent of the applications made are so dealt with.

In various instances, complaints in which it has no jurisdiction, e.g., claims for loss and damage come before the Board. Here, without alleging jurisdiction, the matter is usually brought to the attention of the railway concerned, in the hope that thru the Board's good offices a settlement may be expedited. Many requests for information, e.g., as to particular rates, come in. As indicative of the diversity of the complaints coming before the Board, it may be mentioned that for the month of October, 1916, the complaints received embraced more than fifty different headings.

REVIEW

What interpretation has been taken of the British North American Act by local railroads and with what result?

How was rate regulation regarded in the early days of Canadian railroad building? What change was brought about by the Railway Clauses Consolidation Act?

Outline the powers and duties of the Board of Railway Commissioners with reference to rates and traffic facilities.

In your opinion what has the Board accomplished?

CHAPTER III

DEVELOPMENT OF RAILWAY FACILITIES AND EQUIPMENT

1. *Expansion of Canadian railway system.*—While the railway construction of the United States has of recent years been approaching the saturation point, it may be pointed out that the mileage constructed in Canada in 1912 was equal to three-fourths of that constructed in the United States in the same year. While railway expansion has been fairly general in Canada, 71 per cent of the railway mileage built in 1912 was west of the Great Lakes. Putting the matter another way, it may be said that for every day of the year there was, west of the Great Lakes, an average construction, in 1909, of 2.6 miles; in 1910, of 3.11; in 1911, of 3.08 and in 1912, of 4.3 miles.

2. *Distribution of railway mileage.*—Analysis of the figures of railway mileage as contained in the government returns for the year ending June 30, 1915, shows the following distribution:

Provinces	Percentage of Population	Percentage of Mileage
Prince Edward Island	13.01	10.1
New Brunswick.....		
Nova Scotia.....		
Quebec	27.8	13.1
Ontario	35.02	30.5

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Provinces	Percentage of Population	Percentage of Mileage
Manitoba	23.7	45.2
Saskatchewan		
Alberta		
British Columbia		

It might seem that, in proportion to population, the section west of the Great Lakes is well supplied with railways; but this would be a hasty conclusion. Of the total area embraced in the different provinces, the provinces west of the Great Lakes constitutes 57 per cent.

The following table summarizes the relation between population and mileage in the different Provinces:

Province	Railway Mileage	Miles of rail- way per 1,000 square miles	Population per mile of railway
Prince Edward Island	275	137.5	340.8
New Brunswick	1,962	72.6	179.1
Nova Scotia	1,367	65.09	360.1
Quebec	4,677	13.3	423.9
Ontario	10,702	41.1	235.7
Manitoba	4,498	61.6	101.2
Saskatchewan	5,327	21.2	92.4
Alberta	3,174	12.4	118.1
British Columbia	3,100	8.7	126.5
Yukon	102	0.05	....

3. *Concentration of railway control.*—Since 1867, there has been a steady movement toward limiting the number of railways. Larger companies have eliminated the smaller ones by absorbing them. This concentration of the control of mileage has been, in

the main, along the lines of communication running east and west.

The extent to which concentration has developed is indicated in the following table, which shows the distribution of the mileage of some ninety-five lines of steam railways in Canada:

	Percentage of total mileage
Canadian Pacific	35
Canadian Northern.....	22
Grand Trunk & Grand Trunk Pacific.....	17
Provincial Government lines:	
Temiscaming & Northern Ontario, and New Brunswick Coal and Railway.....	1
Dominion Government lines:	
Intercolonial, Prince Edward Island, National Trans- continental	10
Great Northern lines.....	1
Canada Southern (Michigan Central).....	1

The remaining mileage is concerned primarily with short-haul lines of local interest, the average per line being only forty-three miles.

4. *Potential railway traffic.*—An interesting index of the traffic possibilities of an agricultural country like Canada is to be found in the sum total of agricultural production. For while this, on account of local consumption, will be much in excess of what moves by rail, it shows the maximum possible movement. It is also of interest as showing where the greatest traffic possibilities are.

Details as to agricultural production and as to live stock are given in the following summary:

TOTAL LIVESTOCK

Provinces	Head	Percentage
Prince Edward Island.....	270,876	1.90
Nova Scotia.....	595,460	4.18
New Brunswick.....	447,488	3.14
Quebec	2,892,708	20.35
Ontario	4,998,303	35.16
Manitoba	936,132	6.58
Saskatchewan	1,929,990	13.62
Alberta	1,857,021	13.05
British Columbia.....	284,685	2.02
	<hr/> 14,212,663	

Between 1911 and 1915, there was a decrease of 700,000 head. There were increases in horses and milch cows, and decreases in other cattle, sheep and swine.

FARM PRODUCTS, EXCEPT LIVESTOCK

Provinces	Tons	Percentage
Prince Edward Island.....	779,641	1.91
Nova Scotia.....	1,271,537	3.13
New Brunswick.....	1,185,742	2.92
Quebec	5,898,113	15.25
Ontario	12,099,676	29.60
Manitoba	5,080,373	12.53
Saskatchewan	9,395,747	23.15
Alberta	4,168,026	10.25
British Columbia.....	673,847	1.26
	<hr/> 40,552,702	

The totals show an increase of 11 per cent over 1910. There are decreases in the eastern Provinces and increases in the western Provinces. In 1910,

the eastern Provinces produced 28.2 millions of tons and the western 7.1 millions of tons of farm products; in 1915, the figures were 21.2 and 19.3 millions of tons respectively.

These figures do not include fruits, home-made cheese and butter, which figures are not available for the inter-censal years. The omitted quantities would make about one per cent difference.

5. *Actual traffic*.—Of course, the potential traffic differs in such items as have been quoted from the actual traffic. The traffic returns for 1915 show that the tonnage of agricultural products transported was 40 per cent of that given in the preceding statement.

6. *Freight traffic*.—Between 1907 and 1915, the total freight traffic of Canadian railways has increased by 54 per cent, from 56.4 to 87.2 millions of tons. In the same period, agricultural products carried increased 72 per cent, products of mines 79 per cent, and manufactures 58 per cent. The following table shows the percentage importance, for a period of years, of the leading articles carried:

DISTRIBUTION OF FREIGHT TRAFFIC BY PERCENTAGES
OF EACH YEAR'S TRAFFIC

	1910	1911	1912	1913	1914	1915
Products of Agriculture..	17.31	17.17	19.30	16.31	18.11	18.79
Products of Animals.....	3.71	4.00	3.53	3.01	3.29	3.75
Products of Mines.....	35.11	35.87	35.18	38.16	37.73	37.89
Products of Forests.....	17.54	16.57	15.82	15.75	15.79	16.03
Manufactures	13.44	17.00	18.16	18.68	16.62	14.76
Merchandise	3.39	3.06	3.03	4.14	5.43	6.04
Miscellaneous	9.50	6.33	4.94	3.95	3.03	2.74

Products of agriculture, products of the mines and of the forests are the most important in point of

tonnage. In the increase of tonnage of 1915 over 1907, these three classes are responsible for 82 per cent of the increase.

7. *Commodities carried by railway system.*—The distribution of carriage of commodities among the leading railway systems is given in the following table:

DISTRIBUTION OF CARRIAGE OF COMMODITIES AMONG
LEADING RAILWAY SYSTEMS

	I.R.C. Per cent	G.T.R. Per cent	M.C.R. Per cent	C.P.R. Per cent	C.N.R. Per cent
Products of Agriculture....	14.0	18.7	26.09	26.3	19.7
Products of Animals	2.9	5.1	6.03	4.7	2.1
Products of Mines.....	29.7	34.3	33.6	29.2	26.1
Products of Forests.....	25.2	12.1	4.3	15.4	31.3
Manufactures	19.6	16.9	27.2	15.7	7.1
Merchandise	4.08	6.6	...	7.6	10.5
Miscellaneous	4.552	6.7	2.88	1.1	3.2

8. *Passengers carried.*—The passengers carried in 1916 were 46.3 millions as compared with 32.1 millions in 1907, an increase of 43 per cent.

9. *Tonnage sources.*—The source of the tonnage is of interest as bearing on the revenues of the railways, for where traffic is received from connecting carriers the line receives a division of the rate instead of the total rate. Of the total tonnage for 1915, 56.5 per cent originated on the line carrying the traffic; 18.02 per cent was received from Canadian connections; while 25.48 per cent was received from United States connections. The percentages differ as between the roads themselves. For example, in the case of the Temiscouta and the Algoma Central, two of the smaller roads, the percentages of tonnage originating on the lines were respectively 89.6 and 95.8.

The Grand Trunk and the Michigan Central (Canada Southern) handle large amounts of tonnage from United States connections, with resultant low ton-mile earnings on a large volume of low grade tonnage. The other lines find the traffic from United States connections relatively less important.

The following table presents a summary statement of the source of tonnage for the more important lines. The figures are expressed in percentages.

	Tonnage originating on line carrying the traffic	Tonnage from connecting Canadian carriers	Tonnage from United States connections
C.P.R.	72.02	22.8	5.18
C.N.R.	79.6	19.07	1.99
I.R.C.	80.1	19.9	...
G.T.R.	43.7	12.07	44.33
M.C.R.	12.3	6.8	71.99

The Michigan Central, the Grand Trunk, the Wabash and the Pere Marquette are, as might be expected from their location, the lines most interested in receiving traffic from the United States roads, the amount so received by them being 76 per cent of the total amount of tonnage received by all Canadian roads from United States roads.

10. *Railway mileage of Canada.*—In the year 1915, Canada, with less than 8,000,000 of a population, had 35,582 miles of railway. This is a mileage 46 per cent greater than that of Great Britain and Ireland and 38 per cent greater than that of France. Among the countries of the world it is exceeded only by the railway mileages of the United States, Russia, and Germany. In addition, 1600 miles were under construc-

tion. Down to Confederation, there were 2,278 miles of railway constructed. In the single year ending December, 1912, an equivalent mileage was added. Since 1896, the railway mileage has more than doubled. In the year 1914-15 alone, 5,000 miles were added. The problem that now faces Canada is one of development up to the recent and rapid expansion of railway network.

11. *Improvements in roadbed and rolling stock.*—The effect of improved track and rolling stock is concerned with the net profit of operation rather than with the rate actually charged. But it has an indirect effect upon the rate in that it adds to what the railway can do in its operation and, therefore, gives it an advantage in point of such rate reductions as are brought about by the factors lately outlined. Further, since its improved operating condition enables a large volume of business to be handled more economically, it permits the railways, by lowering rates, to stimulate that volume of business which is essential to the full return from its improvements.

In the roadbed there have been great improvements. The 56-pound rails of the early seventies have been replaced with 80, 90 and even 100-pound rails, thereby enabling heavier rolling stock to be carried. In the endeavor to carry heavy trainloads, thereby lessening unnecessary engine mileage, railways are now building on easy grades and curves. Heavy grades and sharp curves lessen tractive efficiency. The Canadian Pacific, which had a 4.4 grade on the

Field Hill, has by tunnel construction cut this in two, thereby doubling engine efficiency. The Grand Trunk Pacific has been built on a .4 grade. The extensive improvements which the Canadian Pacific is making thru the Rocky Mountain territory result in increased efficiency, and they tend to offset the haulage advantages of the easy grades of the new lines.

Engines have increased in weight and tractive efficiency. For example, a Grand Trunk engine built in 1872 weighed, with its tender, 62 tons. The Mikado type, built in 1913, weighs 210 tons. While the average amount hauled per engine per annum depends, of course, on the amount and nature of the traffic offering in the particular year, and on the way the cars are loaded, comparisons of the average tonnage hauled per engine are an index of increasing engine efficiency. In 1908, on the Canadian Pacific the average tonnage moved per freight engine was 12,983 tons; in 1915, it was 18,834. For the Grand Trunk, the figures in 1908 and 1915 were 18,787 and 28,324, respectively.

12. *Increased size of freight cars.*—The size of freight cars was increased during the early seventies after the abandonment, both in the United States and Canada, of the narrow-gauged lines. In the endeavor to introduce economies, increase in carrying capacity was looked to. In 1876, the standard capacity of the ordinary box car was fifteen tons. Today the fifteen-ton car has practically disappeared.

The following table summarizes the distribution of the box car equipment of the Grand Trunk:

Date	CAPACITY			
	30,000 lbs., per cent of total	40,000 lbs., per cent of total	60,000 lbs., per cent of total	80,000 lbs., per cent of total
1906.....	4.57	34.58	60.85	....
1911.....	0.31	15.14	84.55	....
1916.....	0.09	0.98	74.19	24.74

13. *Car loading.*—The 30-ton car may be regarded as the standard general-purpose car today. The larger cars are used for heavy bulk commodities. Under the railway rules, a car may be loaded 10 per cent above its marked capacity. But the frequency with which railroad freight cars can be loaded nearly to their carrying capacity depends on commercial conditions, and on whether tonnage can be held until a maximum load is obtained in the car. While the large cars used by ten of the constituent companies of the United States Steel Corporation averaged, in 1912, thirty-six tons per car, the average loading in Canada was less than half of this. From the standpoint of the railway, there is not only the advantage of the larger amount which can be handled in the larger car, thus economizing in engine and train mileage; there is also an increase in the pay weight per car. The tare or weight of the empty car does not increase in the same ratio as carrying capacity. Thus, out of the total loaded weight of a car, the tare of the 20-ton car is 41 per cent; of the 30-ton car, 35 per cent; of the 40-ton car, 32 per cent; and of the 50-ton car, 30 per cent.

14. *Advantages of electric traction over steam.*—Electric traction has so far been chiefly concerned with passenger hauls, either on street car or inter-urban lines. As an aid to economical traction, the use of electric power, in connection with what is at present steam railway traffic, is attracting attention. The electrification of the Chicago, Milwaukee and Puget Sound in the mountain section has worked out so far satisfactorily and economically.

Steam power is uneconomical in that only a relatively small number of heat units are utilized. In favor of electric traction, it is claimed that when power is generated by fuel there is a reduced fuel bill—hence a greater distance obtained per ton; the expense of enginemen is reduced; the efficiency of the terminals is increased, since the ordinary services of coaling and watering for engines is not necessary at terminals. It is claimed further, that there is increased power during cold weather for the reason that the electric motor is more efficient in cold weather than in hot. There is increased tractive power, maximum tractive effort being obtained from the start; and there is, also, a reduction in manual labor. Whether or not electric traction will be used depends primarily on the volume of traffic moving. If there is a large volume of traffic, it will pay to instal the new system which will give reduced costs on each unit moved. If, however, the volume is light or fluctuating, it may be more economical to use extra pusher engines; since these engines can be used on other sections of the system,

while with the electric installation, or, for that matter, with any other permanent haulage improvement, there are continuing overhead expenses attaching to the section improved, regardless of the fluctuations in volume of traffic.

15. *Economy in operation.*—Whether or not the economies of heavy loading can be utilized depends on the nature of the traffic. In making this allowance, various tests of economical operation present themselves. With increase or decrease in revenue ton-miles, how does the revenue freight locomotive mileage compare? The latest report of the Boston and Maine shows an increase of 22.6 per cent in revenue ton-miles, with only an increase of 14.2 per cent in freight locomotive miles. The significance of the freight locomotive miles is concerned not only with the capital cost and depreciation of the locomotive producing these miles, but also with the fuel consumption. The cost of fuel is one of the largest items that go to make up the total expense of railway operation. In 1915, the consumption of fuel in Canada per 100 locomotive miles was 7.63 tons, costing \$23.04. Mr. J. G. Sullivan, Chief Engineer, Canadian Pacific western lines, computes the coal consumption per calculated horsepower of work at eight pounds.

Other tests that may be considered are: Is there an increase in revenue tons per freight-train mile? Is there an increase in the train load? Is there an increase in revenue tons per loaded revenue car-mile?

In 1916, the Southern Railway increased its ton

mileage by 19.3 per cent, while its freight train mileage increased only 3.44 per cent. Its average train load increased by 15.5 per cent, reaching a figure nearly double what it was in 1908. Further examples of economy in operation are afforded by the fact that, with an increase of 15.16 per cent in loaded car mileage, there was a decrease of 7.30 per cent in empty car mileage. This increased efficiency was obtained without an increase in the number of locomotives.

The report of the Canadian Pacific for the year ending June, 1916, affords some striking examples of economy in operation. The ton-mile rate was 6.41 mills as compared with 7.33 in 1915. This is attributable to the heavy wheat movement having long hauls on a low rate basis. The ton mileage increased 78.71 per cent, while the loaded car mileage increased only 49.34 per cent, and the transportation expenses 25 per cent. There was an increase of 22 per cent in the average train load. The average tons of revenue freight per loaded car were 22.19 in 1916 as against 19.13 in 1915, an increase of 15 per cent. One factor of economy was the slower movement of freight. The rule was rigidly enforced that no freight train was to run a mile in less than two minutes. It was found that this lessened derailments.

While the Canadian Pacific favors low speeds in freight movement, the Michigan Central, on account of the nature of its freight movement, is a high speed road. The Grand Trunk is midway between these two positions.

16. *How earnings are measured.*—In measuring the earnings received for freight and for passenger service, it is the custom in most countries to use statistical units known as ton-miles and passenger-miles. The ton-mile is made up of the total number of tons hauled, multiplied by the average distance hauled. Similarly, the passenger-mile is made up of the total number of passengers, multiplied by the average haul. By dividing freight earnings by revenue ton mileage, the receipts per ton per mile are obtained; and by dividing passenger earnings by revenue passenger mileage, the receipts per passenger per mile are obtained.

REVIEW

Give in the order of their importance the products carried by Canadian railroads. Which has shown the greatest percentage of increase in the period 1910–1915?

From what sources was total tonnage received by Canadian railroads and in what proportions?

What has been the effect of improved track and rolling stock on railroad rates?

Discuss some of the advantages which electric traction has over steam.

How would you determine the ton mile; the passenger mile? How are ton-mile receipts and passenger-mile receipts determined?

CHAPTER IV

PRINCIPLES OF FREIGHT CLASSIFICATION

1. *Classification fundamental*.—A shipper of freight must acquaint himself with the freight classification and the class tariffs. In many cases he must consult commodity tariffs as well. Class tariffs and commodity tariffs are considered in the next chapter. A classification is a ready reference list of the articles of freight which a railway holds itself out to carry for the public offering traffic.

Logically and historically, the striking of the rate comes first; but in practice today the classification comes first. Industry has become very complex and the articles offered for carriage are many and diversified. It is obvious that to carry in a tariff by specific reference, the names and rates of the commodities which the railways hold themselves out to carry would make the tariffs exceedingly voluminous.

2. *Early tariff classification*.—Even in early traffic conditions it was recognized that, altho the articles and rates to be carried might be included in a single sheet, there must be some system of grouping and differentiation of charges. The first tariff sheet in the United States was issued August 27, 1816, by the Lake Champlain Steamboat Company, and set out the following articles and rates:

Pot and pearl ashes, per bbl.....	\$1.00
Provisions per hundred.....	.75
Flour, per bbl.....	.50
Firkins of butter or lard.....	0.25
Tierces of seed or salt.....	1.25
Tierces of rice.....	2.00
All other articles (except bullion or specie), per ton...	5.00

In the days of wagon transportation two classes were recognized—light and heavy articles. The rates on the former were assessed on the cubic foot; on the latter, on the hundred pounds. As late as the middle of the last century, the railways of the United States arranged their classifications to suit their varying conditions and needs. The grouping adopted was usually a simple one. A few examples from the year 1847 will show this. The Nashua and Lowell, which was fifteen miles in length, had only one class, and freight was charged \$1 per ton for the distance. On the Boston and Worcester, a somewhat more elaborate, altho still simple, grouping was made:

Coal, iron, lumber and manure.....	4c. per ton mile
Heavy merchandise, e.g., sugar, salt, butter	6c. per ton mile
Groceries and dry goods.....	.6c. to 8c. per ton mile
Light and bulky merchandise.....	.6c. to 10c. per ton mile

The Boston and Maine, then seventy-one miles in length, had two classes, viz.:

Coal, iron, manure, lumber, salt, sugar, butter and groceries,	\$2.20 per ton for the whole distance.
Light and bulky merchandise and dry goods,	\$3.62 per ton for the whole distance.

The Concord also had two classes.

The ratings of the classification are either for less-than-carloads (L. C. L.)—that is to say, for one hundred pounds or for multiples of one hundred pounds charged as a multiple of the hundred pound rate—or for carloads (C.L.). When no distinction is made in rating in respect of quality between a carload and a smaller shipment and the rate is the same per hundred pounds for the smaller as for the larger shipment, it is called an any-quality rating. An any-quality rating enables the small shipper to compete on fairly equal terms with his more powerful competitor.

3. *Railway contention on rating.*—It is contended by the railways that when carload ratings are provided, they should represent a legitimate commercial necessity and a genuine carload movement. That is to say, the average bulk moving should be such as to justify the C.L. rating. From the standpoint of the railway, it is articles which are traffic producers, such as fuel, raw materials, productive implements or machinery, building materials, and foodstuffs other than luxuries, which should have the first consideration in granting C.L. ratings.

The railway position in regard to the conditions which justify granting C.L. ratings may be summarized as follows:

It is to the interest of the railways, as well as to the public, that rates be low enough—but not below a remunerative point—to permit the general movement and distribution of commodities in general demand in

large quantities for construction, building, manufacturing and other purposes. It is a sound rule for railways to adapt their classification to the laws of trade; if the article moves in sufficient volume and the demands of commerce will be better served, it is reasonable to give it a carload classification. A lower rate for carloads than that applied to shipments of light traffic in less than carload lots should be required only upon circumstances and conditions of service to the large shipper so dissimilar as to require, in the line of equal treatment, a less rate than is made for the small shipper. When a claim is made for lower rates for carload shipments than those applied to shipments of light traffic in less-than-carloads, it should be shown that failure to apply such lower rates results in unjust discrimination.

The objection of the railways to granting all commodities C.L. ratings is in great degree due to their fear that if this were done there would, thru the use of the mixing privilege, which is referred to later, be a building up of a carload composed of less-than-carload quantities. Looked at from the standpoint of the cost of the service, the carload movement is less burdensome than the less-than-carload movement.

While in the early days, when hauls were short, very simple grouping was possible, and while it was even possible for a single sheet to set out both the commodities and the rates, modern business conditions and the increasing length of the haul have wrought great changes. So complex has industry become and

so many and diversified are the articles offered for carriage, that the tariff of Canada, with its 711 items, is short and simple as compared with the Canadian Classification which, with its 3,742 L.C.L. ratings and 2,347 C.L. ratings, covering 7,011 items, enfolds a group of commodities stretching from acorns to zinc washers. A similar complexity is to be found in the United States, where the Official Classification carries some 10,000 items. In the Southern Classification there were, in 1908, 3,503 L.C.L. and 773 C.L. ratings; in the Western Classification, 5,729 L.C.L. and 1,690 C.L. ratings; while the Official Classification had 5,852 L.C.L. and 4,235 C.L. ratings.

Under such conditions the attempt to include in each tariff all articles whether of actual or potential carriage would make the tariffs bulky and cumbersome. In the item of printing alone, it would mean a burdensome expense. It is, therefore, necessary to have some ready reference work (like the Classification) which sets out what articles the railway is prepared to carry. This makes the tariff simpler and therefore of more service to the shipper. The early examples of classification which have been referred to show that it was appreciated, tho in a crude way, that it was unfair to charge all articles alike. Moreover, it is very important that the groupings of the classification be relatively reasonable.

4. *How classifications are built.*—In the early days, when hauls were short and there was but little interchange of traffic, the confusion arising from

diversities of classification was not so serious in its effects; but when, as in the United States, thru consolidation of existing lines and additional construction, the lines of railway reached steadily into the interior, enabling longer hauls to be made necessitating interchange of traffic between railways, it often happened that different portions of the same railway were subject to different classifications. The effect of this may be seen in an extreme form in the situation in which the Wabash Railroad found itself in 1883. In that year it had in effect the following classifications:

	No. of Classes in Classification
Middle and Western States	6
Southern Railway & Steamship	18
Mississippi Valley	5
Revised Western	9
Trunk Line, Eastbound	13
Trunk Line, Westbound	5
Texas	8
Pacific Coast, Eastbound	9
Pacific Coast, Westbound	Rates quoted for each article

It requires no elaboration to conclude that the shipper, unless he had especial facilities for keeping track of the situation, would be utterly at sea.

5. *Classifications of the United States.*—By 1887 there had come into existence three leading Classifications: the Official, the Southern, and the Western. The Official covers traffic in the territory north of the Ohio and Potomac Rivers, including New England,

and east of a line from Chicago to St. Louis and the mouth of the Ohio River. This is the densest traffic territory in the United States. The Southern applies east of the Mississippi River and south of Official territory. The Western Classification applies west of Lake Michigan, the Mississippi River and Official Territory. Occasionally there are overlapings of these classifications; for example, in the case of a shipment to or from a point near the boundary of the classification territory one classification may govern thru. Thus, St. Louis uses the Official Classification eastbound, the Western westbound, and the Southern southbound.

While there has been a movement for uniform classification in the United States, the diversity of trade and traffic conditions has so far prevented the success of this movement. Consequently, there is no necessary uniformity as between the classifications, in respect of either rating or description. Under Official Classification No. 43 there are under the item "Clothing," nine descriptions, the final one being "N.O.S. in bales or boxes" L.C.L. 1. In Western Classification No. 54, there are fifteen descriptions; but while clothing, boxed, N.O.S., is carried first class L.C.L., in bales, N.O.S., it is not taken. The Official Classification has six numbered classes and two "rules." These are, in effect, additional classes. Rule No. 25 includes articles rated at 15 per cent less than second class, and Rule No. 26 includes those rated at 20 per cent less than third class. The Southern

Classification has six numbered and seven lettered classes. The Western contains ten classes, five numbered and five lettered.

6. *Canadian classification.*—In the earlier days the same chaotic conditions in regard to classification existed in Canada as in the United States. The various small independently operated roads had each its individual classification, there being no necessary common base. In 1874, the class rates applying from station to station on the Grand Trunk were governed by the "Grand Trunk Railway Classification of Freight." The merchandise classes, which were four in number, scaled as follows:

1st class	200% of 4th
2nd class	167% of 4th
3rd class	133% of 4th
4th class	100% of 4th

In addition, there were four special columns governing carload rates on flour per barrel, grain per one hundred pounds, lumber per car, and live stock per car. Various other items were scheduled as "same rates as flour," "same rates as lumber," and so on. There were also various ratings which were multiples of the four merchandise class ratings.

The Canadian Classification came into existence in 1884. It had at first nine classes; it now has ten. But in effect it may be said to have sixteen, for the multiples of the first class rating must also be noted. There are the ratings $1\frac{1}{2}$; D-1 (double first class);

2½-1 (two and one-half times first class); 3-1; 3½; 4-1. The Classification is built up on the fifth class, fourth being 25 per cent, third 50 per cent, second 75 per cent, and first 100 per cent higher than fifth. In the first five classes the railway loads and unloads, except when the piece or package weighs two thousand pounds or over; from the sixth to the tenth class it does not.

There is a subdivision of Canadian Classification territory, known as Canadian Freight Association territory; this includes Canadian points east of but not including Port Arthur, and east of and including Sault Ste. Marie, Sarnia, and Windsor. Westbound from this territory to points in Oregon, Washington, and North Pacific Coast terminals in the United States, the movement is subject to the Canadian Classification.

7. *International traffic*.—The international trade movements between Canada and the United States, and some movements in Canada, are subject to the classifications of the United States. In a summary way the leading examples are as follows:

Official Classification applies—

(a) From C. P. R. stations west of Montreal to Montreal for export.

(b) Canadian Freight Association territory to and from Illinois, Iowa, Missouri.

(c) Canadian Freight Association territory to and from Louisiana, Kentucky, Tennessee, Alabama, Florida.

Southern Classification applies to—

Canadian Freight Association territory to and from Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia.

Western Classification applies to—

(a) Canadian Freight Association territory to and from British Columbia.

(b) Same territory to and from Arkansas and Oklahoma.

(c) Same territory to and from Rocky Mountain States and west to the Pacific.

(d) California, Nevada and Utah to Manitoba.

The Railway Act recognizes international traffic as a complicating factor, for it provides that subject to any order or direction of the Canadian Railway Commission, any freight classification in use in the United States may be used in the traffic to and from the United States.

8. *Expansion of Canadian classification.*—The Canadian Classification has steadily increased the number of items as business has expanded. At first there were simple, broad groups. There has been a progressive differentiation of ratings. This is shown in the comparative summary of ratings that follows:

Year	L.C.L.	C.L.	Any Quantity
1884	1,284	622	459
1913	3,742	2,347	922

On account of the variety of articles covered by the classification it would be impossible, without quoting

the complete classification, to give a fully illustrative list. For the purpose, however, of illustrating the way in which the grouping is arranged, the following examples may be quoted (see also specimen page opposite) :

Class 1. Drygoods, clothing.

“ 2. Cotton piece goods.

“ 3. Apples; fish, salted, dried or smoked.

“ 4. Lumber, cement, building material.

“ 5. Iron pipe, pig iron, horseshoe nails, green coffee, paints, etc.

“ 6. Machinery, agricultural implements, etc.

“ 7. Railway equipment.

“ 8. Flour, grain, and coarser grain products, potatoes, and vegetables.

“ 9. Live stock.

“ 10. Lumber and forest products, coal, rough stone, sand, lime, hay, and straw.

As examples of the supplementary classes the following may be quoted:

4—1. Aeroplanes, wicker baskets not nested.

3½—1. Canoes, three or more crated together.

3—1. Aquariums, boxed, baseball bats in boxes.

2½—1. Cutters, single or crated, over 34 inches high and less than 72 inches long, actual weight.

D—1. Binders, s.u., honey.

1½. Strawberry baskets, nested; perfumery in cases.

9. *Statistical returns to government.*—The form in

Twenty-five per cent. over and above the rates herein specified shall be charged for the carriage of all articles shown in this Classification as to be carried at Owner's Risk of Weather, Breakage, etc., as the case may be, if the same are required by shipper to be carried at Carrier's Risk (see Rule 7).

Index Nos.	Classification No. 15 Reads:—			Change to Read:—		
	Page	Item	C	L.C.L.	C.L.	Date Effective
1 16 26			Chemicals, Drugs and Medicines— Acids (See Notes): Acetic: In demijohns, all covered with wicker, O.R.B. . . . In demijohns covered with wicker and packed with straw in baskets, O.R.B. In demijohns, boxed, O.R.B. . . . In barrels	D-1 1½ 1 3	3 5	
2 19 3			Cigarettes and Cigars— In cases securely strapped, or with iron straps or clamps on the ends In cases, not strapped as above	1 D-1		
3 20 27			Crates, Empty, prepaid— L.C.L. C.L., minimum 20,000 lbs.	D-1	10	
4 21 50			D Detonators.—Subject to Rule 10.			
5 22 5			Dry Goods— Bagging and Bags, N.O.S.: In bales.... Cloth.	3	5	
6 22 13			Brattice—Same as Oil Cloth.			
7 25 8			E Equipment, Roadmaking— Consisting of carts, dump cars, dump wagons, engines and boilers, graders, plows, road machines, road rollers, rock crushers, scrapers, stone-spreading wagons, tile moulds and wheelbarrows, in mixed carloads		6	
						August 15th, 1911.
			Chemicals, Drugs and Medicines— Acids (See Notes): Acetic: In demijohns all covered with wicker, O.R.B. In demijohns, cork and canvas covered, O.R.B. . . . In demijohns covered with wicker and packed with straw in baskets, O.R.B. . . . In demijohns, boxed, O.R.B. In barrels Cigarettes and Cigars— In cases securely strapped with wire or band iron; or in cases fastened with iron or steel key clamps, and boards forming top, bottom and sides stapled together on the inside, and so stated by shipper on bill of lading In cases, not fastened as above Crates, Empty, prepaid— S.U., C.L. minimum 20,000 lbs.	D-1 D-1 1½ 1 3 3 1 D-1 D-1	5 10	
			D Eliminate item 50, page 21.—See item 4, page 2 of this supplement.			
			Dry Goods— Bags and bagging, N.O.S.: In bundles or bales Cloth: Brattice: 13 feet long and over Under 13 feet long: In bales or rolls	 3 1 3	 5 5	
			E Equipment, Roadmaking— Consisting of carts, dump cars, dump wagons, engines and boilers, graders, plows, road machines, road rollers, rock crushers, scrapers, stone-spreading wagons, street-sprinkling wagons, street sweepers, tile moulds and wheelbarrows, in mixed carloads		6	

which the statistical returns are made to the government does not differentiate commodities according to the classes of the classification. A partial re-grouping, however, shows the following results:

DISTRIBUTION BY CLASSES

Railway	3-5	4	5	6	7-10	8	9	10	Per cent in these groups
Mich. Central.....	3.4	0.6	9.5	2.4	0.3	22.1	1.2	24.4	63.9
Intercolonial	1.4	0.2	8.5	0.5	0.2	10.1	0.9	46.2	68.0
Can'n. Northern....	0.8	0.1	2.5	0.4	4.8	17.2	1.3	54.8	81.9
Can'n. Pacific	2.3	0.3	5.0	0.6	4.3	21.6	2.6	40.9	77.6
Grand Trunk	1.6	0.4	6.1	0.5	2.0	14.3	2.2	36.8	63.6

10. *Quantity differences.*—The Canadian Classification, in common with other classifications, recognizes a difference in quantity as justifying a difference in rating. In England it has been recognized that in striking a rate a railway may recognize that the commodity moves in large quantities. But in Canada, as in the United States, the carload is taken as the highest unit of quantity. The shipper who moves thirty carloads does not receive more favorable treatment than the man who moves one carload. In turning at random the pages of the Canadian Classification it will be found that cotton piece goods are rated 2 L.C.L., 4 C.L.; or, to take another example, canned goods are 3 L.C.L., 5 C.L.

The L.C.L. rating is for one hundred pounds or upward. In the case of "smalls," or shipments under one hundred pounds, no matter what the class might otherwise be, the charge is the same as that for one hundred pounds first class, with a minimum charge of 35 cents. The railways take the position that on ac-

count of the bookkeeping and handling costs incidental to such small shipments, a charge for one hundred pounds at the class rating to which it belongs would not be adequate.

Fourth class is the lowest L.C.L. rating in the Canadian classification. As is indicated in the following tabular summary, it comprises only the heavier, coarser and cheaper commodities:

	L.C.L.	C.L.		L.C.L.	C.L.
Iron and steel . . .	4	—	Building and roof-		
Fire brick	4	— 10	ing paper	4	— 5
Cement	4	— 10	Salt	4	— 10
Plaster	4	— 10	Potash	4	— 5
Pitch and tar	4	— 7	Flour	4	— 8
Asphalt	4	— 7	Grain	4	— 8
Caustic soda	4	— 5	Oil cake	4	— 8
Coal	4	— 10	Pickled meat and		
Fertilizer	4	— 10	fish	4	— 5
			Sugar	4	— 5

In order to obtain the advantage of a car-lot rating it is not necessary that one should load up to the full carrying capacity of the car. But it is necessary to furnish a minimum weight.

The position taken by the railways in regard to minimum weights is put succinctly in a statement made by the Chairman of the Canadian Freight Association in a case before the Board:

All articles are provided with a less-than-carload rating, but only those which are generally and to some extent forwarded in straight carload quantities are given the carload rating. . . . In order to entitle a shipper to the lower car-

load rating when it is provided in the classification, the rules require that a full straight carload, subject to certain minimum weights which are designed to produce adequate per car revenue, be forwarded by one shipper from one station on one day to one consignee and destination. . . .

Where the character of the freight, size of the package, method of packing, weight of the goods, strength or fragility, vary so greatly, it is impossible to fix by rule a minimum weight which will in all cases exactly correspond with (and not in some cases exceed) the actual quantity which can conveniently be put into a car. It is impracticable by rule to confer the benefit of the carload rate without the use of a minimum weight. In the case of heavy coarse freight, the shipping public finds no difficulty in loading up to and even in excess of the minimum weight. There are no commercial transactions which interfere with this being complied with. In the case of light bulky freight, the weight-carrying capacity of the car is disregarded, and the loading capacity generally determines the minimum weight, but always subject to its application resulting in a fair per car revenue. This is essential in order to prevent the necessity of hauling a lightly loaded car and to obtain economy in the use of equipment and yard facilities. A less-than-carload consignment is charged for its actual weight at the higher less-than-carload rate, unless the total charge exceeds the charge based upon the carload minimum weight and carload rate, in which event the lower charge governs. At no time does a charge on a less-than-carload lot exceed the charge for a carload of the same class.

The classification provides that unless otherwise specifically provided for in the classification, the minimum weight in box cars not over 36 feet 6 inches in length is to be as follows (actual weight to be charged for when in excess of the minimum)—

1st, 2nd and 3rd class 20,000 lbs. per car

4th, 5th and 6th	24,000 lbs. per car
7th, 8th and 10th	30,000 lbs. per car

On specific items in the classification there may be minimum weights differing from those just quoted. To quote a few examples: lumbermen's boats and batteaux have a tenth class rating, with a minimum of 20,000 lbs., while boats N.O.S. (not otherwise specified) have a sixth class rating, with a minimum of 20,000 lbs.; concrete spreading carts with a fourth class rating have a minimum of 14,000 lbs.; and charcoal, with a seventh class rating, has a minimum of 24,000 lbs.

11. *Car measurements.*—The box car not over 36 feet 6 inches, inside measurement, 8 feet 6 inches wide and 8 feet high, inside measurement, is taken as the standard box car; but as the car increases in length the Canadian Classification increases the minimum. The same thing is done by both the Official and Western Classifications. In the two former the increase in the minimum does not increase in regular gradation as the length of the car increases, while in the Western Classification the rule is followed, in the case of light and bulky goods, of adding for each foot over 36 feet, inside measurement, 3 per cent to the minimum.

The question of the increased minimum is not concerned with increased length alone; there is also the question of increased height of the car. While the standard box car is 8 feet high, inside measurement, or 13 feet 6 inches from the rails, special cars, as, for example, furniture and automobile cars, are higher.

There has been submitted to the Board a proposition that, in the case of light and bulky goods, the cubical capacity of the car should be looked to and a minimum fixed on it, and that for every one hundred cubic feet over twenty-five hundred cubic feet of containing space there should be a percentage addition. The Wisconsin Railway Commission, in dealing with the 3 per cent scale of the Western Classification, has expressed the opinion "it would seem that the cubic capacity of the cars is a better basis for adjusting minima than length alone."

12. *Cost of C.L. and L.C.L. shipments.*—While the placing of a higher rating upon an L.C.L. shipment than on a C.L. shipment is an established practice, there is a question as to whether there are factors so differentiating these two traffic movements that the apparent discrimination is not "unjust." It may be said that the small shipment is a retail transaction while the large is a wholesale one. But the distinction looked for must be more fundamental.

Car-lot traffic is relatively much less costly to handle than less-than-car-lot traffic. In the former, the loading per car is relatively heavy, thus materially reducing the proportion of dead weight to the pay weight. When it is loaded and unloaded by the shippers, as compared with the less-than-car-lot traffic, it involves much less expense in the way of station, office, and other services. In western Canada, the Canadian Pacific estimates the physical cost of handling L.C.L. traffic from shed door until it is stowed in the car at

from 35 cents to \$1.00 per ton. The further service in connection with the time it takes to assemble a car must be considered. At Winnipeg or Calgary, for example, cars are spotted every day for certain sections of the railway and for certain places on the railway. The car stands at the shed all day, then goes out in the morning on the way-freight train.

The Wisconsin Commission has estimated that in the State of Wisconsin the average car-lot loading is 17 tons, while in the case of less-than-car-lot traffic the average loading per car does not reach 6 tons. It then continues:

On one of the principal carriers in the Western Classification territory the average terminal cost per cwt. amounts to about 2.3 cents, when the loading amounts to 17 tons per car, and to almost 5.8 cents when the loading amounts to 7 tons per car, while the average cost of moving the freight between the stations amounts to about 0.26 mills per cwt. when the car is loaded with 17 tons, and to about 0.44 mills per cwt. when it is loaded with 7 tons of freight. On these bases, for a haul of two hundred miles, there is a difference in favor of the carload traffic that amounts to about 7 cents per cwt.

Summing up the matter, it expresses the opinion:

We feel quite justified in saying that the less-than-carload traffic is relatively less profitable to the carriers than the carload traffic, and that the higher rates for the former are more than offset by the greater cost of handling it.

The difference between less-than-car-lot and car-lot ratings is justified by differences in cost.

REVIEW

What is a classification, and why is it necessary?

What is an any-quantity rating, and how does it help the small shipper?

Give the railway's position with regard to conditions which justify C.L. ratings.

How many classes has the Canadian Classification? How is it built up?

What is the highest unit of quantity used in making shipments? What is an L.C.L. rating? How is the charge for the small shipment arrived at?

What are the arguments for and against higher rates on L.C.L. than on C.L. shipments?

CHAPTER V

FEATURES OF CANADIAN FREIGHT CLASSIFICATION

1. *Uniformity in Canada.*—The attempts of the United States—so far successful only in part—to obtain a uniform classification applicable thruout the entire section served by the railways of that country, is indicative of the advantage both to the shipper and to the railway of uniformity of practice. While in Canada there is one general classification, certain modifications must be recognized which, in certain respects, create one minor and two general classifications.

On the White Pass and Yukon route, connecting Skaguay and White Horse, shipments are governed by the Northern Classification. In this classification there are three general ratings, A, B and C, A being the lowest. In addition, there are the following multiples of these classes, $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3 and 4 times A.

As has been indicated, the Canadian Freight Classification is built up on fifth class. But while in Western Canada, outside of the Yukon, the principle of having ten classes is followed, the method of building is different. In Western Canada, when the Canadian Pacific began operation, the classification which was adopted was the Joint Northern, which at that time

was being used in the Dakotas and the adjoining United States territory. In this classification, first-class was double fourth. There was no percentage relation for the intervening classes. Later, when other classes were added, no percentage basis of relation of these was adopted; and so, while seemingly uniform, the classification in Western Canada is out of line with that in use in Eastern Canada.

2. *Mixing privilege*.—In dealing with the question of minimum weights, it was for the moment referred to as if only straight carloads of a single commodity were involved. But in addition to a minimum weight made up of only one article, there may be a minimum weight arrived at by mixing.

In Eastern Canada the arrangement as to mixing may be summarized as follows:

- (a) When a number of articles of *the same class* in carloads are tendered on one day by one consignor, destined to one consignee, the quantity being sufficient for a carload, they take the rate per hundred pounds of the class at the highest minimum of any of the articles so carried.
- (b) When the articles are of *different classes*, the rate and minimum of the article in the highest class applies.
- (c) In a mixed carload of the fifth and higher class freight having a minimum of less than 20,000 lbs., a minimum of 20,000 lbs. at the highest class rate applies.

For obvious reasons, there are, in dealing with cer-

tain commodities, such as petroleum, lubricating oil, gasoline and live stock, limitations of the general mixing privilege.

The mixing privilege is limited to articles which have a distinctive car lot rating, which means that in a majority of cases less than car lot quantities may be combined to obtain the advantage of car lot rates. At times an application for a C.L. rating is made, not because it is expected that the commodity will move in carload quantities, but because with such a rating it can form part of a mixed car, thus obtaining the advantage of the carload rate. Effervescent or Health Salts are rated, any quantity, first class; Epsom Salts are classed 3 and 5. An application has been made to give the Health Salts the same rating so that, since they are handled by wholesale grocers, they may enjoy the mixing privilege under the grocery list.

In Western Canada, however, the mixing privilege is limited by the adoption of the principle of trade lists. The classification states that "articles under distinctive headings will not be taken in mixed carloads at carload rates." "Distinctive headings" as set out in the classification are, for example, agricultural implements, hardware and groceries. The same provisions apply in the West as do in the East, (a) where the articles are of the same class, (b) where the articles are of different classes.

3. *Effect on shippers and consumers.*—The effect of this is that there is a much wider mixing privilege east of Port Arthur than west of it. In Eastern Can-

ada the system redounds to the advantage of the consignee who cannot take a straight carload of a particular line of goods. In Western Canada, the rule existing redounds to the advantage of the man who can take a straight carload of a particular line of goods. The rule as to limitation to distinctive headings applies not only to shipments between points in the West, but also to shipments between points east and west of Port Arthur.

The difference in situation between the East and the West in this respect may be indicated by a specific example. A mixed carload of hoes, anvils, and cultivators is possible east of Port Arthur. In Western Canada, tools and hand farm implements are in the hardware list under fifth class, while the cultivators are in the agricultural machinery list with a sixth class rating. Consequently, on such a shipment from an Ontario point to a point west of Port Arthur, the sixth class rating would apply on a minimum of 20,000 pounds for the cultivators and the L.C.L. rate would be charged on the tools and hand implements. If, however, the tools and hand implements formed the bulk of the shipment, they would move on a fifth class rating with a minimum of 24,000 pounds, and the other articles would move on an L.C.L. rating.

4. *Divergent trade interests secure compromise classification.*—The effect of this is, that in respect of distributive business, there are really two classifications.

This situation has grown up as a result of a compro-

mise between divergent trade interests. In the classification of 1893, the mixing privilege was limited by the list principle. Various modifications were subsequently made. By 1897, the general practice established was the same as it is east of Port Arthur today. In 1902, the list principle was adopted generally. In 1904, an attempt was made to obtain the open rule for the whole of Canada. Instead, there was worked out the compromise which gives two systems, as has already been indicated.

The compromise was attributable, in the main, to the increasing importance of the jobbing business of Western Canada. British Columbia and Eastern Canada wanted a generous mixing system; Winnipeg did not favor it. A dozen years ago, the manufacturers of Eastern Canada were pleading before the Board for more generous treatment to mixed carload lots, with a view to the further development of a jobbing business thruout the Northwest. To this, Mr. J. H. Ashdown of Winnipeg, whose prominence in the mercantile world made his utterance significant, rejoined that such an application was entirely in the interest of the Eastern jobbers. These, he said, were merely birds of passage coming to Winnipeg when times were good and leaving when they were bad.

5. *New distribution centers.*—The expansion of the West has led to the building up of new distributing centers. In 1901, the bulk of the distributive business in the West was done either from Eastern Can-

ada or from Winnipeg westward on the one hand, or from Victoria or Vancouver eastward on the other. Between Winnipeg and the Rockies, Calgary and Edmonton were the largest wholesale points; but their business was small. Since 1901, there have grown up on the Prairie Provinces, west of Winnipeg, such distributing centers as Portage la Prairie, Brandon, Regina, Moose Jaw, Swift Current, Medicine Hat, Camrose, Yorkton, Saskatoon, Weyburn, Lethbridge. In British Columbia, there are, in addition to Victoria and Vancouver, Revelstoke, Kamloops, Nelson and Vernon.

6. *Long and short hauls for Prairie centers.*—The Prairie distributing centers, once developed, began to emphasize the advantage of getting close to the consuming point on a long haul movement with a relatively short haul out on carload or less-than-carload movements. Such points are so situated that they can have the advantage of the long haul rate on straight carloads, then distributing out on the short hauls. Winnipeg, on the other hand, has now the long haul to it and the relatively long distributing haul out.

7. *Jobbing businesses and classifications.*—The complexities introduced by jobbing businesses, their bearing upon classifications and the mixing privileges thereunder are illustrated by recent developments. The Boards of Trade of Calgary, Moose Jaw, Weyburn, Lethbridge, Saskatoon, and Regina desire a further modification of the rule as to mixing

as it now applies west of Port Arthur. They point out that jobbing centers are now established at central points in the Provinces of Manitoba, Saskatchewan and Alberta, and contend that reasonable protection should be given to these centers to do the business which is naturally tributary to such points. At present, shippers of small lots may combine their shipments and secure carload rates on what would otherwise be carried at broken lot rates. In the case of groceries, mixtures are permitted on over 300 articles running from alum to washtubs. This, it is claimed, is unfair to the western wholesale merchants. It is admitted that there may have been some justification at an earlier date for maintaining carload rates to retailers. The contention now is that there is "no further necessity for violating the principle of giving to the purchaser of a carload all the protection that the Railway Classification and tariffs intended he should have. At present it is possible for the shipper of one package to secure as low a rate as the shipper of any number of carloads." It is, therefore, contended that the following rearrangements should be made: carload rates should be confined to carload quantities of one commodity or of commodities of an analogous character; that the minimum weight for each class of commodity should reasonably approximate the carrying or cubical capacity of a standard car with due regard for the marketing conditions of the articles in question; that the present basis of trade lists should be abolished and carload rates applied

only on carload quantities of one commodity, or one or more commodities of an analogous character.

8. *Edmonton objects to extension of mixing privilege.*—In objecting to any extension of the mixing privilege, the Board of Trade of Edmonton in dealing with a cognate matter used the following language:

. . . (it) would work irreparable injury to the wholesale interests of Edmonton, and would be the means of transferring to wholesale houses in Toronto, Hamilton, Montreal and Winnipeg a considerable volume of trade now enjoyed by wholesale centers west of Winnipeg. It is contended as unreasonable that wholesalers situated fifteen hundred or two thousand miles away, or even eight hundred miles with no organization in the territory affected and no investment in the way of buildings or stocks, should expect to be placed in as advantageous situation to do western business as those houses which, under the encouragement afforded by Classification No. 16 (i.e., by the list system), have invested their capital and developed facilities on the spot for taking care of that trade.

9. *Distributive business, a question of balance.*—As will be seen in dealing with the question of rates, the matter of distributive business and the settlement of distributive areas is a question of balancing. Each jobbing center, while contending for the geographical advantage of its situation, is chary in defining the limits of its sphere of influence. And thus while merchants of the West are contending for a rearrangement of the mixing rule which will give them the longest possible haul in carloads, and a distributive business on the short hauls in less than car lots, points such

as Vancouver, Winnipeg, Fort William, Toronto and Montreal are opposed to the further modification which has been outlined. Montreal, for example, desires that the open rule should apply generally thruout Canada.

10. *Factors affecting classification.*—As Commissioner Clark of the Interstate Commerce Commission has aptly said:

Classification is not an exact science nor may the rating of a particular article be determined alone by the yardstick, the scales and the dollar. The volume and desirability of the traffic, the hazard of carriage, and the probability of misrepresentation of the article are large factors of prime importance in classification. At best it is but a grouping. . . .

Consideration of the earlier examples of classification, to which reference has been made, indicates that at least three determining factors were considered—space, weight and value. It was considered that where an article could be packed solidly into a comparatively small space it was proper to make a lower charge than when the same weight took up a much larger space. And there was also, in a somewhat crude way, an attempt made to take into consideration the basis of value or ability to pay. Today, while there are many refinements of classification, these three factors are still of much importance.

While the scope of the classification has become more inclusive as business has expanded, and while the ratings have at the same time become more differen-

tiated, it is impossible to have a class for each article. Consequently, the class groupings, while intended to embrace analogous articles, do not embrace articles necessarily identical in point of value, cost of carriage, or other factors.

11. *Value of the article.*—The value of the article is recognized as an important factor. From the standpoint of cost of service, it does not appear justifiable to class gloves, whalebone, thread and umbrellas in first L.C.L., while common brick, concrete building blocks and coal are classed fourth L.C.L. When the C.L. ratings are considered it will be found that the first group of commodities extracted from the dry goods list have an any-quantity rating, while common brick, stone, building blocks and coal have a tenth class rating C.L.

If, however, an attempt were made to arrange the ratings on the basis of the cost of service, assuming that this could be accurately established, the result would be that the low grade commodities which are placed in tenth class would be able to stand only a short haul movement. Under these circumstances, such commodities would be monopolized locally with a resultant disadvantage to the consumer. As a result of this, value is recognized as a factor, and ability to pay places certain articles in the first class and others in the tenth.

In so arranging commodities, cognizance is taken of the fact whether the articles are in the rough, partly

finished, or finished state. Millstones in the rough are classed L.C.L. third, C.L. fifth; when finished they are classed second and fourth. While dimension or building stone in the rough, sawn or dressed, not carved, is fourth and tenth, it is first and fifth when carved or lettered, crated or boxed. Or, again, difference in quality is recognized. Thus, while brick—common, fire, vitrified and scoria blocks—is rated fourth and tenth, enameled and glazed brick is third and fifth.

In dealing with the classification of blaugas, the Board found that the ratings of second and fourth were reasonable, this conclusion being based on a consideration of the article and of its ability to pay as compared with the lower ability to pay of the articles classed third and fifth, which were the ratings asked for. So, also, where a carload rating was asked for on cigars, which have an any-quantity rating of first class, it was held that as cigars were luxuries the any-quantity rating was not unfair. A similar position was taken in dealing with an application to reduce the rating of cut-glass from double first to first class.

On a complaint that Prepared Roofing was improperly classed L.C.L. 3, C.L. 5, while plain felt for roofing was classed 4 and 5, it was pointed out that there is a wide range of Prepared Roofing—that it sells by the square of 100 feet at wholesale prices, varying from 70c to \$2.56 per square. Common saturated felt, with which comparison was made, sells

wholesale at from 26c to 82c per square of 100 feet. While the highest quoted price for felt overlapped the lowest price for Prepared Roofing, it was recognized that the general range of value of the "roofing" was much higher, and it was held that from this standpoint it was not improperly classified.

In using value as a basis, there is considered not only the ability to pay, but also the market value of the article. That is to say, where an article has a high market price, the higher rating has but a slight percentage effect upon the market demand. But in the case of articles of wide demand and consequently lower market price the higher rating would add such a percentage to the market price that the demand would be curtailed. Consequently, as a matter of self-interest, the ratings must, within certain broad limits, recognize ability to pay as a factor.

12. *Bulk and weight.*—As the railways in transporting freight are selling car space, what can be packed in a given space is important. There must be considered whether the articles are K.D. (knocked down) or S.U. (set up). Sheaf carriers, S.U., are D-1, while K.D. they are second class, these ratings being for L.C.L.; while lumber wagons are first class S.U. and second class K.D. Another consideration is whether the articles are loose or in bulk, including in this the consideration as to whether they are crated in boxes or otherwise packed. A variety of ratings will be found based on the difference in packing. Thus in the tin and tinware list the following will be found:

	L.C.L.	C.L.
Tinware, N.O.S.:		
Loose, O.R.D.	D-1	6
Not nested, in crates, boxes or barrels..	1	5
Nested, in crates, boxes or barrels.....	2	5
Nested solid, in crates, boxes or barrels.	3	5

Other considerations falling under the heading of bulk and weight are whether the commodities are in L.C.L. or C.L. shipments, and questions of minimum weights. Lamp chimneys have a rating of second and fifth, with a minimum of 20,000 pounds. It may be noted that while the normal fifth class minimum is 24,000 pounds, the load weight of these goods will, on account of their being light and bulky, very seldom reach 20,000 minimum, normally.

13. *Risk attached to carriage.*—A railway is an insurer, and so the risk attaching to the carriage of the goods is considered. Scattered thruout the classification will be found the following notations:

O.R.B.	=	Owner's risk of breakage.
O.R.C.	=	" " " chafing.
O.R.D.	=	" " " damage.
O.R.Det.	=	" " " deterioration.
O.R.F.	=	" " " fire.
O.R.L.	=	" " " loss.
O.R.Lkge.	=	" " " leakage.
O.R.S.	=	" " " sifting.
O.R.W.	=	" " " weather.

When these owner's risk notations appear in the classification, the railway is relieved of the risks necessarily incidental to the transportation of the article so noted. But it is not relieved of the liability for any loss or damage which may result from any negligence

or omission of the railway, its agents or employees. If a shipper does not wish to ship at "owner's risk," the articles proffered by him will be carried subject to the terms of the Standard Bill of Lading, but subject to the addition of 25 per cent to the rates applying when the goods are carried at "owner's risk."

Particular examples of the classification, considering the risk attending transportation, are plentiful. Green vegetables O.R.Det., in baskets, bags or crates, are first class L.C.L., while evaporated or desiccated vegetables are third class L.C.L. in bags, boxes, or barrels. The rating is affected by the question of whether the commodity is liquid or dry. Liquid shellac in tins, boxed, is first and third, while dry shellac is second and fourth. In the rating of acids, there has to be taken into consideration not only the risk of handling with reference to the goods themselves, but also as to other property. Special care must be taken in handling them.

14. *Facilities and equipment required.*—While the nature of the facilities required has an important bearing on the rate, it also affects the conditions attaching to the classification rating. Apples and potatoes must be prepaid, in winter.

In arranging classification, the matter of tonnage movement is important. While low grade commodities must have a low rating in order to move at all, the fact that a commodity moves in large bulk facilitates the low rating arrangement. The question of competition of markets is a factor, too. So, also, is the com-

petitive effect exercised by alternate water routes.

In dealing with classification, the question of analogy plays an important part. A change in the rating of an article will create a demand for a change in a complementary commodity. While aluminum and copper wire are distinct commodities, they are both complementary and competing; so we find them both with a rating of second and fourth. The lists of the classification have grown up out of the varied needs of business, and to disregard these is to upset business. In the grocery list, we find not only flour, sugar, jams, and jellies, but also glue and tobacco. In 1911, the Canadian Freight Association, acting for the Canadian railways, proposed a rearrangement of the ratings on tobacco. The most important part of this rearrangement was the substitution of a fourth class carload rating for the existing fifth class rating. In evidence, it was shown that 84 per cent of the output of plug tobacco of the Dominion Tobacco Company and over 60 per cent of its cut tobacco were disposed of to the grocery trade. The Ontario Wholesale Grocers' Guild testified that from 80 per cent to 85 per cent of the tobacco sold was handled by grocers, and that the tobacco business was about ten per cent of the total trade of the grocers. The result of the proposed change would have been a dislocation of business, since tobacco and groceries would no longer have been able to mix on a fifth class rating. The Board, in ruling on the matter, said: "In view of the dislocation which the proposed in-

creased ratings would cause, it would be necessary for the railways to make out a strong affirmative case. This they have not done . . . and their application should be dismissed."

It is impossible, without going into tedious detail, to enumerate all the factors which determine the classification ratings. As a fairly compendious summary, there may be quoted the following extract from the *Annual Report of the Interstate Commerce Commission for 1897*:

(there is considered) whether commodities are crude, rough or finished; liquid or dry; knocked down or set up; loose or in bulk; nested or in boxes or otherwise packed; of vegetables whether green or dry, dessicated or evaporated; the market value and shippers' representations as to their character; the cost of service, length and duration of haul; the season and manner of shipment; the space occupied and weight; whether in carload or less-than-carload lots; the value of annual shipments to be calculated on; the sort of car required, whether flat, gondola, box, tank, or special; whether ice or heat must be furnished; the speed of trains necessary for perishable or otherwise rush goods; the risk of handling, either to the goods themselves or other property; the weights, actual and estimated; the carriers' risk or owners' release from damage or loss.

15. *Classification in operation in Canada.*—The Railway Act provides that the railway shall keep on file, at the stations where freight is received and delivered, a copy of the freight classification or classifications in force upon the railways for inspection during business hours. The Board is given wide powers in

dealing with the classification. These are set forth in Section 321 of the Railway Act, which provides:

The tariff of tolls for freight traffic shall be subject to and governed by that classification which the Board may prescribe or authorize, and the Board shall endeavor to have such classification uniform thruout Canada, as far as may be, having due regard to all proper interests. The Board may make any special regulations, terms and conditions in connection with such classification, and as to the carriage of any particular commodity or commodities mentioned therein, as to it may seem expedient. The company may from time to time, with the approval of the Board, and shall, when so directed by the Board, place any goods specified by the Board in any stated class, or remove them from any one class to any other higher or lower class. Provided that no goods shall be removed from a lower to a higher class until such notice as the Board determines has been given in the *Canada Gazette*.

The classification is revised from time to time. It is issued at irregular intervals. The issues down to date have been as follows:

No. 1.—Jan. 1, 1884.	No. 9. —June 1, 1893.
No. 2.—June 1, 1884.	No. 10. —Jan. 1, 1896.
No. 3.—April 1, 1885.	No. 10a.—Sept. 1, 1897.
No. 4.—May 10, 1886.	No. 11. —Jan. 1, 1900.
No. 5.—May 1, 1888.	No. 12. —May 1, 1903.
No. 6.—April 15, 1889.	No. 13. —Sept. 1, 1907.
No. 7.—Feb. 10, 1890.	No. 14. —Jan. 1, 1909.
No. 8.—Oct. 1, 1891.	No. 15. —Nov. 15, 1910.
No. 16.—March 1, 1913.	

Between issues, supplements are issued to take care of changed ratings.

While the Board of Railway Commissioners for

Canada, popularly spoken of as the Railway Commission, has power to initiate changes in classification, normally it does not act on its own initiative, but on complaint. The initiation of the classification or of a supplement thereto is in the hands of the Canadian Freight Association, acting for the railways, and more particularly the Advisory Committee thereof.

As has been seen, the increased ratings have to be published in the *Canada Gazette*. The Board by its order of January 18, 1909, provided that, in filing changes of classification, this material should be submitted in proofsheets setting forth a list of the articles not previously provided for, which it is proposed to add to the classification and the ratings for these articles. Further, it was directed that information should be given as to the proposed advances, reductions, or other changes in rules, ratings or minimum weights. In making application as to changes, it is required that the reasons should be set out. As an example of reasons given, the following dealing with "Lath, iron or steel, in bundles, crates or boxes," may be referred to:

This material has several uses, chief of which is for plastered walls. In this it takes the place of expanded metal or wooden lath. Coming in competition with expanded metal of about the same value and transported under the same general conditions, there should be no difference in the ratings, and third class L.C.L. seems reasonable and should, we think, be permitted.

16. *New issues of classifications.*—Any proposed

new issue of the Classification, or any proposed supplement thereof, must be submitted in printed proof form for the approval of the Board before it becomes effective. If the new issue or supplement increases a classification rating, notice that the Classification or supplement has been submitted to the Board for its approval must be given in two issues of the *Canada Gazette*. It is required that the proof shall show under the heading of "additions," articles not previously classified and the proposed ratings therefor; also new rules or regulations which it is proposed to add to the Classification. Under the heading of "Changes," proposed increases, or reduced ratings, or changes in the existing rules or regulations must be set out, there being included in a parallel column those previously approved by the Board.

The application to the Board is to be accompanied by a statement of the reasons for proposed changes involving increased transportation charges. At the same time, it is required that there be furnished to each of some 54 representative industrial associations and Boards of Trade a copy of the proof and of the notice of publication, with the request that fully explained objections, if any, to the proposed changes involving increased transportation charges be filed with the Board within thirty days from the receipt of said proof and notice.

17. *Board's participation in classifications.*—Instead of dealing with the classification after it is made, as does the Interstate Commerce Commission, the

Board may be said to participate in its making. After representations are received from the various trade bodies, it is usual to arrange a conference between the railways and the representatives of the trade organizations. At this conference, the Chief Traffic Officer of the Board is also present. The matters at issue are discussed and an attempt is made to arrive at a conclusion. The Chief Traffic Officer reports to the Board, which deals with the unsettled questions, if there are any. When this has been done, an order is issued authorizing the coming into effect of the classification.

18. *False classification and complaints.*—False classification of freight, either by a railway or its employes, or by a consignor or consignee, with a view either to give or to obtain carriage of goods at lower than the rates legally in force, is punishable for each offense by a penalty of not more than \$1,000 and not less than \$100.

From time to time, an individual may complain of the classification as fixed. For example, a manufacturer of explosives desired paraffin wax to be given a rating under chemicals. He made application to the Advisory Committee of the Canadian Freight Association, which did not see fit to accede to his request. By application to the Board the matter was set down for hearing and a direction was given that the revised rating should be granted.

Since classification is tied up with rate-making, and since the changing of an article from one class to an-

other is equivalent to a change in the rate, it is essential that any organization regulating rates should have an efficient control over classification as well.

REVIEW

What is the mixing privilege and to what articles is it limited? How is it applied in Eastern and in Western Canada?

What objection has been made to the extension of the mixing privilege?

Name the principal factors in railway classifications and define the influence of each.

How is a freight classification changed and what regulations govern a new issue?

If you, as a merchant, wanted to complain about a classification how would you proceed?

CHAPTER VI

FREIGHT RATES

1. *Importance of freight traffic.*—In the fiscal year ending March 31, 1916, the tariffs filed with the Board totaled 71,880. Of these, 52,671 were freight tariffs. That is to say, 175 freight tariffs were filed every working day. These tariffs are concerned not only with traffic lying wholly within Canada, but also with the transit business in which both Canada and the United States participate. The tariffs vary in size from a transcontinental tariff, with its 107 pages, to a supplement of a single sheet.

In a new country such as Canada, where a sparse population is spread over a large territory, the receipts from freight traffic largely outrank those from passenger business. If the mails, express, baggage and parlor car receipts, which total about four per cent of the gross earnings, are included in the passenger total, the following tabular summary is available:

	1910	1911	1912	1913	1914	1915
	Per	Per	Per	Per	Per	Per
	Cent	Cent	Cent	Cent	Cent	Cent
Passenger service	30.44	30.90	29.65	28.99	29.85	30.37
Freight	67.54	67.07	68.35	68.99	68.19	67.31
Station and train privileges, etc..	.39	.44	.49	.61	.33	.46
Telegraph, rents and other sources	1.63	1.59	1.51	1.41	1.53	1.86

That is to say, in Canada, for every dollar earned from passenger business in 1915, \$2.44 were earned from freight business.

During the period from 1902 to 1908, the Canadian Pacific added 14 freight cars and 1 passenger car every day, and 1 locomotive every three days. In the period between 1909 and 1912, the railways of Canada added 512 locomotives, 926 passenger cars, and 30,315 freight cars to their equipment.

2. *Increases in rolling stock.*—Taking the year 1908 as the base, its figures standing as 100, a comparison of the increases in rolling stock owned in later years may be made. Since the Canadian Northern was at this time in its beginning stages, the percentages, being computed on a smaller basis, give an exaggerated idea of its rate of increase as compared with the other railroads. Subject to this caution, the following summary is of interest:

	Frt. locos.	Pass. locos.	Frt. cars	Pass. cars
1912.				
C. P. R.	133	122	137	135
C. N. R.	146	104	189	173
G. T. R.	119	101	94	109
1913.				
C. P. R.	149	140	177	153
C. N. R.	155	141	250	225
G. T. R.	90	119	99	109
1914.				
C. P. R.	139	210	197	165
C. N. R.	170	166	281	242
G. T. R.	117	112	126	108
1915.				
C. P. R.	163	174	195	165
C. N. R.	203	261	295	359
G. T. R.	100	116	130	115

The percentages show a decrease in freight cars for

1915. This applies also to the general railway situation. After an addition of about 40,000 cars in 1913, and a further addition of 22,000 in 1914, the 1915 figures fell off by approximately 3,000. It is probable that this meant the scrapping of old cars. In connection with the number of cars in use the increase in capacity must be remembered. Between 1908 and 1915, the average capacity of a Canadian Pacific box car had increased 25 per cent; of a Canadian Northern box car 3 per cent; and of a Grand Trunk one 18 per cent. The smaller percentage of increase in the case of the C. N. R. is no doubt due to the fact that coming at a later date it started out with larger capacity equipment; the other lines still had on hand older equipment. In the comparison of locomotive supply, the increase in size and tractive efficiency must also be kept in mind.

3. *Tonnage and mileage service.*—In Canada, in the period from 1907 to 1915, the gross earnings from freight increased by 41 per cent. The tonnage and mileage service performed afford a measure of what the railways are doing. The following table puts the matter for a period of years in a summary manner:

	1910	1911	1912	1913	1914	1915
Average haul, miles	211	200	218	216	207	202
Average tons per train	311	305	325	342	353	344
Average loaded cars per train.	18.15	18.03	18.19	18.0	18.4	18.1
Average tons per car	17.13	16.91	17.87	19.01	19.18	18.43

But for the shorter hauls and lighter loadings of the smaller lines the averages here shown would be higher. As an example of the position of the longer lines,

reference may be made to the Canadian Pacific which, in 1915, had an average haul of 458 miles and an average of 359 tons per train.

The increase in general in the average haul is an index of the expansion of the railway network of Western Canada. In the period in question, there is an increase in the average loading per car. But taking the average car at thirty tons capacity, it will be noted that on the figures of 1915, 38 per cent of the carrying space, on the average, was empty.

4. *Railway rates of universal interest.*—The fundamental part that transportation plays in all countries and the greater importance of freight traffic in a new country, has caused much discussion as to the proper basis of rates, especially of freight rates. While certain phases of competition have an effect on railway transportation, there are also limitations of competition. In a sense this is becoming more and more true of all modern industry, and the easy-going ideas as to the pervasive effects of competition which developed at a time when industry was not organized on a large scale and large investments of capital were unnecessary, are now being shocked into a readjustment.

The service of the railway is as fundamental in modern industrial life as electric light and water services and street cars are in the routine of the city dweller. Any interference with the efficiency of the transportation system is of far-reaching consequence. A congestion at a frontier terminal creates a fear of a coal famine. The large mass of the people

are in one way or another affected by the transport of commodities on the railway. Few, nowadays, lead the hermit life. Not only are we dependent on the railway in the normal distributive process, but we are greatly dependent on it in our maladjusted distributive organization which is characterized by wastes of transportation. When we ship Eastern Townships butter to Vancouver Island and New Zealand butter to Ottawa, New Zealand poultry and mutton to the interior valleys of British Columbia, and eggs from Ontario to Regina, it is but little wonder that the freight rate elicits active discussion.

5. *Competition*.—Not only is the rate a matter of wide interest; the nature of the railway transportation business is also important. In a letter which Leland Stanford wrote to the San Francisco Chamber of Commerce in 1873, he said: "Whenever undue profits upon an investment in railroads, or any other corporate property accrue, other capital will always be found to enter into the same business to share such profits, and, by competition, to reduce them to a legitimate standard." On the other hand, J. J. Hill, in his evidence before the Interstate Commerce Commission in 1902, said: "Competition does not lower rates; on the contrary, it advances them. In the Northwest, where for twenty years the Northern Pacific and the Great Northern have been at peace, where one road has agreed with the other on rates and maintained the agreement, rates are lower than in any other part of the country."

Railways are not operating in a frictionless economic ether, as Stanford naïvely suggested. They are forced by their nature to come into some kind of relationship. A dry goods merchant, dealing with his customers, is not dependent upon the other merchants concerned in local trade. He may do more than a local trade without demanding any cooperation with other merchants. It is true that the pursuit of his trade demands a cooperation with the wholesale merchant. But within the limits of his retail business his relationship to other merchants is not one of cooperation, but of competition.

6. *Compared with mercantile and manufacturing business.*—A merchant must, of course, be prepared, to supply with limits, the goods demanded by his customers, within the time specified. A railway is engaged in selling services, and readiness to serve is therefore essential to its business. A merchant, while he must be ready to serve, has the opportunity of adjusting his stock to seasonal demands, and in so doing he has the opportunity to turn over his capital. A manufacturer may conceivably accumulate a surplus stock of goods to meet a later demand. It is patent that a railway cannot create service in advance of demand. It has to be prepared to provide service when and how demanded. This readiness to serve is represented in locomotive and freight car units.

A striking example of this is afforded by the western grain movement. The grain begins to move about two and a half months before the close of navigation

on the Great Lakes, and every effort has to be made to get the grain forward to Fort William and Port Arthur. Consequently, the railways must be ready to meet a peak-load in a short period of time. On September 29, 1913, the Canadian Pacific handled, in and out of Winnipeg, 5,014 cars of grain. On the same date thirty-eight trains of grain were dispatched from Winnipeg in ten hours, or an average of one train every sixteen minutes. In order to meet this peak-load, the railway must have not only a number of cars sufficient to carry the grain peak-load, but also sufficient for the ordinary business of the railway. Were it possible to equalize the grain movement over the year, it is obvious that a lesser number of cars would be needed to move the total business. In the movement of the wheat crop of Western Canada in the year 1913-14, the railways moved 37.5 millions of bushels to Fort William and Port Arthur in November, 1913, while in August, 1914, they moved only 1.4 million. Under good weather conditions in October, 1915, the railways moved two and a quarter million bushels into the Lake terminals in one day. More could have been handled had it not been for the fear of congestion thru the inability of the elevators and the boats to take up the grain promptly.

7. *Evils of parallel lines.*—As has been indicated, attempts have been made to trace an analogy, if not an identity, between railway transportation and other business. The analogy, however, is imperfect. On account of the large expenditure of fixed capital neces-

sary, the construction of parallel railways is expensive. Normally it is better, both from the standpoint of the public using the railway and from the standpoint of the public investing in railways, not to have reduplication of closely paralleling railways. If there is paralleling, the chances are that there will not be sufficient local business for the two lines. If the parallel lines connect two important commercial centers, they may each obtain a sufficient share of the trade. But, as regards local traffic, there may not be enough of it to provide for an adequate division of business.

Two parallel railway systems competing for an insufficient local traffic have all the greater reason to join in some arrangement with reference to the division of the traffic. In the realignment of the railway system of eastern Ontario, which has been brought about by the construction of the Canadian Northern and the Canadian Pacific lines—the Campbellford, Lake Ontario and Western—there is in the towns along Lake Ontario a paralleling of the lines of the Grand Trunk and a duplication of its facilities. These new lines have been built primarily because of the thru business. As to the local business, while there will be competition of service, it is not to be expected that there will be competition in rates, except in so far as the short-line mileage of one railway will control the maximum charges of the other railways between given points.

Even if we have two systems which do compete, the competition is different from ordinary competition.

To have competition operating in the same way as in ordinary business, there would have to be a very narrow extent of territory separating the tracks of the competing railways.

If, however, a railway which has a monopoly of the local business charges exorbitant rates, thereby obtaining profits greater than normal, it is possible that potential competition may redress this. But certain qualifications must be borne in mind. The local business adequate for one line might, even with the additional business a second line could develop, be inadequate to give a profit on the investment of two lines. Then, again, if a second line is built, the capital once invested must depend for its return on the conditions affecting its traffic. It cannot, of course, be moved if the profits are inadequate. If a railway is obtaining profits in excess of the normal rate, then, subject to what has been said, free capital may in time be attracted. This takes time, although it is not impossible.

REVIEW

What form of traffic is most profitable to Canadian railways? Why?

Indicate a few of the tendencies which the freight transportation of today shows over that of five years ago.

Wherein lay the error of Senator Stanford's statement about railroads?

How does the railroad business differ from the mercantile and manufacturing business?

Discuss the evils resulting from parallel railway systems.

CHAPTER VII

THE BASIS OF RATE MAKING

1. "*Postage stamp*" rates.—Arguing from the analogy of the postal service, Galt in England and Cowles in the United States contend that there should be a flat rate. Cowles, in his "A General Freight and Passenger Port," has put the position thus: "Railway rates should be determined by the *cost*, and not by the *value*, of the service rendered. Any rate that will pay the cost of the shortest haul of a person, or of a piece of property, within a railway system, will pay the cost of the average haul, and, therefore, the cost of service rate."

The theory of Cowles rests on an exaggeration of the unimportance of distance. While distance may not in a particular case be *the* determining factor, it is *a* factor to be considered. He identifies the cost of the shortest haul with the cost of the average haul. This is a manifest misconception of the significance of averages. Because the average is made up of a series of journeys, long and short, of which the shortest haul referred to is one, there is no assurance of identity between the average haul and the shortest haul. In assuming that the rate that will pay the cost of service of the shortest haul will be the proper rate for all, he

is resting upon pure assumption. If application of the theory were made, it would inevitably happen that the long-distance traffic would be unduly bonused at the expense of the short-haul traffic.

Further, if the rates, as Cowles holds, are to be determined by cost of service and at the same time distance is to be disregarded by applying the postal principle, it will follow that distance is not a varying element in the cost of service, and that it costs no more to haul a car five thousand miles than to haul it five. While the theory might possibly be entertained as a matter of public policy, as a statement of a cost of service basis it is a patent absurdity.

2. *Distance rates.*—While the “postage stamp” theory disregards distance, the equal mileage theory over-emphasizes it. In 1873, there was introduced into the Parliament of Canada a bill to provide that “tolls should be at all times charged equally to all persons and after the same rate per mile for all distances in respect of passengers and traffic.” At that time, the same subject was engaging the attention of the legislature of New York. In both cases, it was the competition of goods from farther west, which went thru on a low-rate basis per mile as compared with the higher-rate basis of the shorter haul, that brought the matter to the front. In Canada, the conditions following the panic of 1873 caused this project to be rather actively discussed in the period from 1873 to 1875.

In England, the Select Committee on Railway

Companies Amalgamation, 1872, summarized the disadvantages as follows:

(a.) It would prevent railways from lowering rates to meet sea, canal, or shorter railway distance rates, thus lessening advantages of competition.

(b.) It would interfere with giving better rates on larger quantities, or on carrying long distances at lower rates. (In respect of quantity, note the difference in Canada between L.C.L. and C.L. In England, trainload quantities may also be considered.)

(c.) It would compel the same rate over expensive as over less expensive lines of the company.

3. *Rates based on capitalization.*—Unless there is, in the first instance, a regulation of the issue of the securities entering into the capitalization, there is no assurance that the capitalization as it stands is, in its entirety, legitimate. Then, again, a railway which has been lavishly assisted by the government, for example the Canadian Pacific, may be able to keep down its capitalization. Another, like the Grand Trunk, may have been forced at times in default of government assistance to issue its stock at heavy discounts. Under the capitalization plan, is the Grand Trunk to be penalized for its misfortunes? Moreover, if the road with the lighter capitalization and rates fixed accordingly competes with the road with the heavier capitalization and rates fixed accordingly, it would happen that between common points the latter road would have to meet the rates of the former. The further question arises, what is to be considered in

striking the rate on capitalization—is it the par, or is it the cash which actually was raised?

The following summary for 1915 will serve to indicate the lack of harmony between the takings per passenger and per ton and the capitalization:

	Average Capitalization Per Mile	Passenger Mile Earnings Cents	Ton Mile Earnings Cents
Canadian Pacific (exclusive of leased lines)	\$ 47,863	2.071	.772
Canadian Northern	57,233	2.193	.831
Grand Trunk	131,395	1.753	.687

4. *Physical valuation as a rate basis.*—Correlated with the question of capitalization as a rate basis is physical valuation, which is attracting so much attention in the United States at present. Commissioner Clements, of the Interstate Commerce Commission, in speaking before the House Committee, said: “I think it is sound justice and law that, as a basis for constitutional earnings, a fair return on the value of the property means, generally speaking, a fair return on the investment actually made, originally and subsequently.”

5. *Physical valuation and its effect.*—Just what the general effect of physical valuation may be, it is impossible to forecast. The American Shippers’ Guide, in its number of March 31, 1913, said:

There is, however, no telling if the valuation when completed will actually result in dollars and cents benefit to the American consumer, who pays the freight rate whenever he makes a retail purchase. . . . It will all depend on whether American railroads are today over capitalized.

It has been estimated that the valuation of the 254,000 miles of railway in the United States will cost \$50,000,000, three-fourths of which cost will be borne by the railways and the balance by the government. The work of valuation, so far done, has varied in cost. It has already cost the Great Northern \$67 per mile and it is estimated it will cost from \$75 to \$100 per mile for the railway to complete its work. The New York, New Haven and Hartford, with its expensive terminals, has cost \$250 per mile. The Boston and Maine has cost \$82 per mile.

Both in the case of capitalization and physical valuation, there is the further consideration that when the rate valuation is struck and the proper return thereon determined, this simply determines the maximum takings of the railway.

Mr. Prouty, who is in charge of the work on physical valuation which is being done by the United States government, has pointed out various factors which must be borne in mind.¹ His positions may be summarized. The greater part of the business of the railways of the United States is subject to competitive conditions of one sort or another, so that the rates of one railway cannot be considered without regard to the rates of other railways. Whatever charge is made by one line between New York and Chicago must be made by all; whatever charge is imposed for hauling lumber to Chicago by one route must be the

¹ Address before second annual meeting of Chamber of Commerce of United States, February 11th, 1913.

same by all competing routes. When farmers have access by wagon to two railways, the rate to a common destination on farm produce must be the same. To quote his summary:

The rate established for one, of necessity, influences and frequently absolutely determines the rate of all, a fact which must never be forgotten when discussing the subject. Now, it is evident that if the commission should select that road most advantageously situated, that road whose business is the largest and upon which the conditions of operation are the most favorable and should so adjust the rates as to yield a return of six per cent upon its value, every other road standing in competition with it would receive less than a six per cent return, and some railroads might receive nothing whatever. The schedules under which one carrier would earn a fair return upon its investment might not even pay the operating expenses of its competitor. Upon the other hand, if that road laboring under the greatest disadvantage were to be selected and such rates established as would permit it to make a return of six per cent upon its investment, its competitors would, one and all, be receiving an undue return upon the investment.

Valuation cannot determine the relation of the rates as between themselves because all commodities cannot contribute in the same proportion to the upkeep of a railway without seriously incommoding the movement of low-grade bulky commodities. To sum up, as was pointed out by Commissioner Clements, valuation will not displace the necessity for the use of judgment since it will not give a hard and fast rule.¹

6. *Cost of service.*—The theory which has attracted

¹ In his speech before the National Association of Railroad Commissioners at San Francisco, October 5, 1915.

increasing attention as a determinant of reasonableness is that of the cost of service. In modern days, when we find construction companies offering to erect a building for cost plus ten per cent, the question is constantly asked why rates cannot be fixed accordingly. In business, the prices, whether for service or for commodities, must first of all cover all expenses, and thereafter enters the item of profits.

Many railways have attempted to distinguish between the expenses of passenger and of freight business. Certain items may be directly allocated; other items which are not capable of direct allocation are, in the case of the Louisville and Nashville and the Burlington railways, divided on the basis of the engine mileage for each class of traffic. While this affords a system of distribution of cost which may be of comparative value one year with another, it does not show how cost is actually distributed, because it is based on an assumption.

The Interstate Commerce Commission abandoned, in 1894, the attempt to arrive in its accounting system at cost of service. It has more recently, in the matter of soft coal rates to the Lakes, taken up the matter of cost distribution once more. It cannot be said, however, that the commission has definitely accepted cost of service as the infallible criterion of reasonableness.

In railway service, there are certain general expenses which must be borne if the railway is to be a railway at all. These charges, in the rough, do not vary with the amount of business done. Then, again,

the railway does both passenger and freight business; the facilities of the railway are used by both these types of traffic. The question arises: how are the expenses of creation and maintenance of these facilities to be divided between these forms of traffic? Moreover, freight may be moving in trainloads, as in the movement of such a staple as wheat; or it may be handled in way-freight trains which are peddling package freight. The question whether the movement is in carload or in less-than-carload quantities, as has been indicated, also affects the cost of handling. But the freight rate which is struck must be an inclusive average. The cost of the movement of freight is affected by the question of whether it is thru or local. The amount and direction of loaded, as compared with empty, freight-car mileage is also to be considered. In Canada in 1915, 28 per cent of the total freight-car mileage represented an empty movement. In the long run, the loaded-car mileage must pay for the empty movement as well.

7. *What is cost of service?*—When we speak of cost of service it must be remembered that it covers a variety of meanings. It may be a primary cost representing the actual cost of movement either of the article moving or of an additional unit of commodity when the traffic is already moving. For example, a certain amount of package freight is moving westward from Fort William and there are empty cars which have to be taken westward. A railway may conceivably desire to attract traffic at low rates to redress the

volume of empty mileage, since, as the cars are moving anyway, it has only the question of the additional cost. Every commodity must contribute in some degree to secondary cost. That is to say, it must make such a contribution to all the expenses of the road plus some return of profit as will enable the railway, one commodity with another, to be continued in an efficient condition. This is the most difficult phase of the cost of service theory, for what the commodity can contribute to this secondary, but none the less necessary, cost, depends on its ability to contribute, not on any preconceived idea of what it ought to contribute.

An important question as affecting any attempts to determine cost of service is the ratio of constant to variable expenses. Adopting the method of analysis used by W. Z. Ripley,¹ the following summary analysis of total expenditures of the railways of Canada for 1915 may be made:

ANALYSIS OF TOTAL EXPENDITURES CANADIAN
RAILWAYS, 1915

	Per cent of Operating Expenses			Per cent of Total Expenses		
	Both	Constant	Variable	Both	Constant	Variable
Maintenance of way and structures. 19.47	19.47	13.02	6.45	17.3	11.4	5.9
Maintenance of equipment 19.06	19.06	9.53	9.53	16.8	8.4	8.4
Traffic expenses.. 3.96	3.96			3.4		
Transportation .. 52.79	52.79	28.375	28.375	46.5	24.95	24.95
General expenses. 4.72	4.72	4.72	.....	4.2	4.2	....
Fixed charges.... ...	....	....	.....	11.8	11.8	....
	100	55.645	44.355	100	60.25	39.25

Summarizing these computations, we arrive at the

¹ "Railroad Rates and Regulations," by W. Z. Ripley.

result that approximately three fifths of the total expenditures of the Canadian railways and 55 per cent of their operating expenses are independent of the changes in the volume of traffic. Two-fifths of the total expenses and 45 per cent of the operating expenses vary with changes in the traffic.

The Wisconsin Commission, whose work in connection with the regulation of rates has been extremely valuable, has placed great reliance upon the cost of service principle. Commissioner Erickson of that Commission, in dealing with the question of rate regulation, has said: "The cost of service both in law and in fact appears to be the fundamental basis for rates." But the judgments of the Commission show that it is an average cost of service, modified by what the traffic will bear, which the Commission is attempting to apply. It ruled in one of its decisions:

The cost of transportation to the carrier consists of the operating expenses, including reasonable returns on their investment. This cost, when modified by what the traffic can fairly bear in the way of transportation charges constitutes the main basis for rate-making. In distributing these costs upon the units of transportation, it is necessary to take into account the respective proportions of the terminal and movement expenses, the quantity transported, the value, relative weight and risks involved for each of the various classes of freight, the loading per car, the gross tonnage of both pay and dead weight the difference in cost as between local and thru trains and many other elements of this nature. It is obvious that in calculations into which so many factors enter, as in the case here, only approximately correct results can be obtained.

8. *Factor of value in cost of service.*—The importance of value as a factor was emphasized in a paper read by Commissioner Erickson before the National Association of Railway Commissioners in November, 1910, in which he said:

. . . costs . . . (are) the first and most essential element in rate-making. But . . . recognition of value in fixing rates is usually regarded as in line with the best interests of all consumers . . . cheap and bulky articles are, as a rule, not moved at all except at comparatively low rates, and this for the reason that their ability to pay is small. . . . While low-priced articles should be charged comparatively low rates, the rates so levied upon them, under normal conditions, should, as a rule, be high enough to cover their share of the ordinary operating expenses including something in the way of net earnings. Such traffic is of importance even on these terms. It increases the volume of the traffic and thereby decreases the cost of the same per unit. By contributing something to net earnings, it also decreases the amount that will have to be borne by the rest of the traffic. The deficiencies in the net earnings from low-grade traffic should be made up by higher rates on the higher grade traffic.

Used in this way cost of service determines not the actual reasonable rate to be charged but the minimum average rate necessary.

9. *Allocation of railway costs.*—The matter of cost analysis is one which involves many technical considerations and in which, so far, it cannot be said that there is a consensus of opinion as to method. If a general scale of rates is being considered, it is necessary, in the first instance, to subdivide expenses between freight and passenger business; and the first question then is to ascertain what expenses may from

their nature be allocated directly to a particular service. Over and above these are certain costs, e.g., those of maintenance of way and structure. How are these to be allocated? They are expenses which must be incurred if the railway is to operate at all. In fact, they are common expenses necessary to and influenced by the necessities of both services, but not wholly controlled by either. The methods utilized in such subdivision are interesting but too technical to be examined within the limits available.

10. *Costs are average, not specific.*—The costs, no matter how worked out, are average, not specific, costs. The judgment of the Board in the Western Rates Case, in dealing with the cost methods used by Mr. Müller who gave expert evidence, was as follows:

The matter was presented to the Board in a very complicated manner, and the cross-examination of the witness and the results can be also so described. Mr. Müller himself describes the situation in this way, on being asked as to what was meant by the statement that the figures were average figures. "They are not specific costs relating to a specific movement or a specific commodity, in any sense. I think it is pretty well recognized that it is practically an impossibility in transportation work to ascertain specific cost for handling any specific service, due to the fact that the transportation service is composed of multifarious and exceedingly numerous individual items and services far more diverse than usually is the case in most manufacturing and mercantile establishments where costs are used. So that the only basis which can be developed at this present time—at least with such statistics as are available—is an average basis in which all the various kinds and characters of freight service are mixed and levelled." . . .

It goes on to show that the 116 primary accounts, as contained in the railway returns, are apportioned by Mr. Müller in terms of nine different bases.

11. *What the traffic will bear.*—The Cullom Committee, whose report was responsible for the constitution of the Interstate Commission, said: "The capacity of each commodity to contribute to the payment of the fixed charges is measured by the extent to which the cost of its transportation fixes its market value and determines the question of its movement." . . . Commissioner Lane, who during his tenure of office as a member of the Interstate Commerce Commission was a most trenchant critic of railway evils, has said:

. . . consideration must be given to what may be termed public policy, the advantage to the community of having some kinds of freight carried at a lesser rate than other kinds, and this is the true meaning of the phrase, "What the traffic will bear." It expresses the consideration that must be shown by the traffic manager to the need of the people for certain commodities. He accordingly imposes a higher rate upon what may be termed luxuries as compared with that imposed upon those articles for which there is more universal demand.¹ . . .

Albert Fink, who was the first railway official in the United States to attempt to make a scientific study of traffic, believes that:

The question that greatly controls tariffs is *what is the service worth* not *what does it cost*; and this is a mere commercial transaction uncontrollable by acts of legislation. The relative value of an article at the place from and to which it is shipped determines the charges for transportation

¹ 22 I. C. C., 623.

it can bear. If a greater charge is made than the difference in these values, the article cannot be moved. It may, therefore, be found necessary to charge on some articles less than the full cost of transportation, in order to enable them to be moved at all, and this necessitates again to charge more on others which can bear higher charges.

Is the principle which the foregoing quotations set out limited to railway business alone?

12. *Other applications of this principle.*—The principle of “what the traffic will bear” has been applied in other forms of business besides transportation. In a certain Canadian department store, it is the rule to have every commodity sold within six months, altho the turnover of most commodities is much more frequent in the six months’ period. A picture, for example, that can not be sold at the price originally marked will be reduced until it is disposed of within that period, even tho it so nets but a slight profit or is sold at cost. Other commodities sold may contribute in greater degree to fixed charges and to profits. In the last analysis, all the commodities will be sold at such prices as will meet not only the charges special to them, but overhead charges as well, plus some contribution to profits. What each commodity will pay to overhead charges and profits will depend on the price at which it can be sold—in other words, on the ability to pay.

A Canadian residing in California found that the price of his home paper, per year, was less west of the Mississippi River than in Canada. This difference in cost was explained by the fact that the return from

subscriptions west of the Mississippi River was regarded as akin to a by-product. To the extent that this return contributed something over and above actual cost to general expenses, it was aiding in holding down the price of the paper in Canada. The only conclusion that can be arrived at, having in mind the different services rendered in the two sections, is that the lower charge was all the traffic would bear.

13. *Practical meaning of the term.*—There is no doubt that if the railway rate is so fixed as to take up the difference between the price at the place of original shipment and the price at destination—the full measure of the value of the service—this is extortion. But the term “what the traffic will bear” is concerned with something within this outside limit. It is concerned not with “all the traffic can bear,” but what it can bear and at the same time afford a mutual profit.

Reference is sometimes made to the fact that many articles of light weight and high values could stand very much higher rates than at present, without seriously affecting the consumer. To say, for example, that an increase of ten per cent in the rates on furniture might add sixteen cents to the cost of a dining-room set; that an ordinary suit of clothing might be increased from a third to half a cent by a ten per cent increase in freight charges; and that by a similar increase the cost of shoes might be increased one cent per pair, is really to beg the question, because the point is not that the article in question could stand a very

much higher rate without appreciably affecting the consumer, but, whether the rate is reasonable. As has been aptly said, "Statements like these . . . emphasize the economy of the transportation service; but they also show with equal clearness that if the carrier is not prevented by competition or by government interference, he may exact such rates of producers as would compel them to pay much greater sums to the carrier than it is entitled to receive."

Charging what the traffic will bear has, with recognition of its proper limitations proper justification. While the transportation charge is not properly a tax, since it is a payment for a specific service, and while in the case of taxation it is difficult, if not impossible, to designate the particular benefit received, the transportation charge bears an analogy to the basis of taxation, namely, ability to pay. Properly applied, charging what the traffic will bear means so apportioning the charges as to allow the widest possible movement of all commodities. Certain charges, as has been shown, do not vary with the traffic. No article should be handled at less than the out-of-pocket charges for its movement. But what shall it contribute to the general expenses? As the Wisconsin Commission points out, there must be considered the value and nature of the article as well. If ice, lime or stone cannot contribute to constant expenses much over and above the out-of-pocket expenses, some other commodity must bear more.

Some years ago, a railway official stated that rates

were based on competition, comparison, and compromise. That is to say, rates are wholly empirical. While this may be too broad a generalization, the experience of Germany is in point. There, on the government owned and operated railways, they had at first a "space" tariff under which each commodity paid an equal rate per mile based on the space occupied by it in the car, plus a fixed terminal charge. Now there is in operation a tapering rate. The rate per kilometer decreases as the distance increases, and it is also modified in particular cases by competition. The government has had to consider the ability of commodities to pay. In the export rates of the German railways to the seaports the same recognition of competition is to be found, both in respect of water and of market competition. For example, before the present war, to meet the competition of British manufactured goods at the seaports, similar German goods were carried by rail to these ports at much lower rates than were charged on local rail movement.

14. *View of Canadian Manufacturers' Association.*—The organ of the Canadian Manufacturers' Association, *Industrial Canada*, in dealing with the subject from the shippers' standpoint, stated the situation as follows:

Criticism of the railways and their methods of rate-making should be tempered by a consideration of some of the problems they have to meet. In theory, no doubt, a carrier should charge the same rate for the same service under all conditions. Practically, such a thing is impossible. In order that the factories of Ontario may operate, it is neces-

sary that coal be carried from Pennsylvania. It must be delivered for a few dollars a ton; it costs so much at the mine mouth; the rest goes for transportation. If more were charged the factory could not buy it and the business developed by that factory would cease. For that reason, railways are hauling coal at a price which in itself would not pay the cost of operation. They do it in order that business in their territory may be developed. The man who establishes a smelting plant in Ontario must be able to manufacture pig iron at a cost which will enable him to sell in competition with his competitors in Pittsburgh, Sydney, or any other point. With fixed charges established and the cost of ore and coal at the mine mouth uniform, he is able to pay only so much for transporting that ore and coal. That is all the traffic will bear. It rests then with the railway to say whether, for the sake of the business such a plant will bring into existence and to keep rolling stock moving or to provide return cargoes, this traffic is worth while at such a price. But the principle, that of charging what the traffic will bear, is sound and is indeed the only system which is at all practicable. The idea that other industries have to pay extra to make up for their low rates on raw materials is absurd. The business has to be taken at a low price or not at all. By taking it fixed charges are distributed over a wider bulk of business and conditions are to that extent improved for other users of the service. It probably costs a railway as much to handle a ton of coal as a ton of silk. If the rates were averaged the buyer of a piece of silk might benefit to the extent of a cent or two, while the householder would find his coal bill go up some dollars a ton. The suggestion would be no more popular than feasible. As the present system is the only one which practical railway men have so far been able to devise and as it has been approved by shippers as right in principle, tho frequently, it is true, somewhat unsatisfactory in its individual incidences, we may be allowed to accept what we have rather than . . . to fly to evils that we know not of.

15. *Determining the reasonableness of a rate.*—In a recent case before the Public Utilities Commission of Maine, Mr. C. H. Tiffany, Traffic Manager of the pulp companies concerned, used the following language:

. . . the making of freight rates is not an exact science, because it is impossible to determine with exactness just what portion of the investment costs and operating expenses should be charged to any particular commodity out of the thousands carried on our railroads. The difficulty of the problem is shown by the different theories of able men as to the proper way to allocate costs and expenses even between the freight and passenger business. As a practical matter, what the carriers and commissions must do, in order to determine the reasonableness of a rate, is to find out how much revenue is necessary to pay operating expenses and permit a proper return for depreciation and interest on the investment; apportion that amount between the passenger and freight business as scientifically as they may; and then apportion the freight revenue amongst the different commodities carried considering a number of different factors.

Thus from the very beginning the question of the reasonableness of a particular freight rate has been determined, not by finding the value of the investment apportioned to and the cost of carrying that particular commodity, but by comparing the characteristics of its carriage with the characteristics of the carriage of other commodities. Generally speaking, the rate for a long haul is relatively lower than for a short haul; a rate for a valuable article or one easily damaged is relatively higher than one for a cheap article or that is hard to damage; perishable freight which must be carried without delay should pay a higher relative rate than freight which is not damaged by delay. Articles that load heavily and compactly are entitled to lower rates than those which are light and do not load the car to capacity. Commodities carried in large quantities should have lower

rates than those in which traffic is not so dense. In general, manufactured articles should pay higher rates than raw materials.

16. *No one factor determines reasonableness.*—What, then, is the test of reasonableness? Distance, bulk, conditions of loading, value, competition, cost of service—these and other factors all have weight. But no one factor can be pointed to as exclusively applicable in every case. There is no yardstick of reasonableness. While there are factors capable of more or less precise determination which bear upon the question of reasonableness, the final answer of a regulative tribunal must be that the reasonableness of a rate is a matter of judgment.

REVIEW

What is the difference between the postage stamp rate and the equal mileage theory?

Discuss physical valuation as a basis of making rates.

What do you understand by the cost of service theory of making rates? How would you apply it? How has it been made to apply by the Wisconsin Commission?

Explain what you believe the phrase "what the traffic will bear" means. Can this principle be applied in your business? Discuss.

How did the Canadian Manufacturers' Association regard the question of rate-making by the railroads?

What is the test of the reasonableness of a rate?

CHAPTER VIII

FREIGHT RATES IN PRACTICE

1. *Class tariffs and commodity tariffs.*—By reference to the classification it may be ascertained in which class the article (for example, cotton piece goods), which the shipper desires to send, is to be found. By reference to the appropriate tariff, the rate for the article will be secured.

Tariffs may name rates either in classes or by commodities. When they name rates on specific commodities, these commodities are taken out of the ordinary classification rating. In Canada and the United States, tariffs quoting rates on commodities are known as commodity tariffs. In England and Germany, they are known as exceptional rates. Commodity tariffs are concerned with the lower grade goods.

In a commodity tariff, the normal unit is the carload. A commodity rate is, in general, a recognition of the volume of movement. It may be given with the intention of developing an industry, or as a recognition of a large tonnage from a staple industry—for example, the movement of grain or live stock in Canada. When there are different classifications in a country, as in the United States, a commodity may be given different ratings in different territories; for

example, in the Southern Classification, raw cotton, a staple commodity, has a commodity rating; while under the Western and Official Classifications it has a class rating. Again, the volume of movement of iron ore in the northern states leads to the establishment of a commodity rate. A commodity rate may be given as a result of water competition, as in the case of traffic destined for the Pacific Coast.

In Germany, the reasons given for granting such rates will outline the extent of the practice. The reasons summarized are; railway competition, competition against waterways and highways, competition against foreign transportation ways, competition to divert traffic to a given harbor, competition of markets, rates granted to develop industries which have unfavorable geographical situation, rates granted to insure the continuity and increase of transportation. For England, the granting of such rates has been justified by the foregoing considerations and, in addition, by volume and regularity of traffic, loading per car or per train, earning power of the traffic, liability or non-liability to damage, and general considerations of what the traffic will bear.

As indicative of the nature of the commodities on which such rates are granted, the following list of the principal articles on which carload commodity rates are published in Canada may be referred to:

Canned goods, lumber and shingles and rough forest products generally, salt, coal and coke, ores, grain and grain products, cement, hides and skins, packing-house products,

iron and steel articles (coarse), building material (brick, stone, sand, lime, etc.), paper, wood-pulp, petroleum and its products, fertilizers, sugar and molasses, starch and glucose, ice, sugar beets, cooperage stock, potatoes, turnips, onions, flaxseed and meal.

As an example of the method pursued in building up a particular commodity tariff, reference may be made to the C. P. R.'s special coke and coal tariff, C. R. C., No. W1296, effective October 4, 1909. This tariff, which applies in Western Canada, took coal out of the 10th class, to which it belongs, and worked out the following basis, the rate tapering as the distance increases:

100 miles and less	66% of 10th class
200 miles and less	64% of 10th class
300 miles and less	63% of 10th class
400 miles and less	62% of 10th class
500 miles and less	61% of 10th class
600 miles and less	60% of 10th class
700 miles and less	59% of 10th class
800 miles and less	58% of 10th class
1000 miles and less	51% of 10th class

Class rates apply to movements either way. They carry the notation that they are effective "between" stations. A commodity rate is specific and applies to a movement in one direction, unless otherwise noted. For example, the Canadian Pacific tariff on grain, flaxseed and grain products from stations in Manitoba, Saskatchewan and Alberta to Westport, Fort William and Port Arthur is limited to the movement in one direction and to specific points.

Commodity rates are extensively used. In Canada, at least 75 per cent of the railway tonnage is carried on commodity rates. In the United States, probably a larger percentage of the business is so transacted. In Canada, 90 per cent of the commodity rates are on articles rated below third class, i.e., on the bulkier articles moving in large volume. In the transcontinental business to the Pacific Coast, into which water competition enters as an important competing and regulative factor, all the rates may be regarded as commodity rates. In England, the commodity rates cover about 75 per cent of the business; in Germany, about 63 per cent.

2. *Comparisons of freight traffic.*—Comparison between the freight rates of Canada and the United States on the one hand, and the freight rates of England and Germany on the other hand, are often made with a view of showing how low are the rates of the New World. Before making comparisons one must be sure that there is a common denominator.

While in Canada and in the United States the increase in the number of carload ratings and the increase in the size of the cars has had its effect in the increase of the average tonnage per car, commercial conditions differ in England and in Germany. In Canada and in the United States, the 30-ton car may be taken as the normal car. In England, the 10-ton car and in Germany, the 20-ton car are the normal cars. The Canadian Pacific in moving grain to the head of the Lakes, in trainloads, can average 33.75

tons per car. In England, the average consignment of grain is about two tons. In England, an average of the business in general merchandise from a representative station of the Great Northern for one day showed 4,427 packages, which had a total weight of 123 tons. The average weight per consignment was two cwt., the average weight per package was 62 lbs. The total number of cars required to move this business was 72, while the average load per car was 34 cwt. Under the most favorable circumstances the average loading of merchandise per car on the London and North Western does not exceed three tons.

In Canada and the United States, large cars with large shipments are used. In England, small cars with small shipments and greater dispatch are used. Some years ago an officer of the Caledonian Railway, in comparing the rates of the quantities moving normally on his railway with those of New York and Philadelphia, found that for distances of forty or fifty miles, the rates on groceries, drygoods and tea on his railway were lower.

In Canada and the United States, the ton-mile rate, a work-distance rate, built up by multiplying weight by distance, affords a statistical measure of earnings. Ton-mile rates are kept in England by the North Eastern Railway, and comparison may be made with the German railways. But in England and in Germany the average haul and the average loading are, because of differences in business conditions, very much less than in Canada and the United States. In

England, even if business were so conducted, it would be too expensive, on account of the expense of terminals, to hold trains until maximum tonnage had accumulated. The ton-mile rates in Canada are held down by the long hauls. Ton-mile rates are of value as a measure of earnings and of the work done for earnings. They are useful for comparative purposes only when conditions are similar. Since they are averages of all kinds of traffic, long haul and short haul, carload and less-than-carload, high-grade and low-grade tonnage, they are averages which do not necessarily afford a cohesive criterion of the reasonableness of a rate.

3. *Difficulty of comparing foreign freight rates.*—The difficulty of obtaining any common denominator which will permit the freight rates of different countries to be compared is illustrated by the following table which shows how certain essential factors affecting the freight rates differ in different countries:

Country	Ton mile rate	Tons per train	Average haul in miles	Average capacity of freight cars in tons
Austria	1,509	211	65	14
Canada .....	.751	344	202	33
France	1.183	147	77	14
Germany	1.244	239	62	15
India .....	.668	185	188	..
New South Wales..	1.575	112	88	..
Switzerland	2,389	135	50	13
South Australia ...	1.919	112	88	..
United States ¹....	.753	451	260	38

4. *Terminal charges kept separate from rates.*—In

¹ The returns for the United States are exclusive of roads with operating revenues of less than \$100,000 each.

England, charges for station and other terminal services are recognized as being distinct from the haulage charge. In Canada and in the United States, the practice has been to quote an inclusive rate. Of recent years, however, the Interstate Commerce Commission has shown favor to a differentiation between a road-haul and a terminal charge. Some of the State Commissions are also taking the matter up. It is a method pursued by the Wisconsin Commission in building up rates. The Nebraska State Commission in dealing with intrastate rates found that the average direct station terminal costs, per hundred pounds, of handling L. C. L. shipments in the first four classes of the Western Classification, was 10.9 cents. In the Western Rates case, evidence was submitted to the Board that on a 380 mile haul the terminal expense was 35 per cent of the total expense.

5. *The two factors in freight rates.*—Logically, the freight rate is composed of two factors—the terminal charge and the haulage charge. Whether the terminal service is carried on in a large expensive terminal or at a small wayside station, the service is distinct from that performed in the road haul. In the Grand Trunk terminals at Ottawa, it takes, allowing space on the team track for a car and for the necessary roadway for access, a space of 800 square feet per car. This space at \$5 per square foot represents an investment of \$4,000 per car for freight-car space, with interest at six per cent, this would mean an interest charge of 65 cents per day per car so handled. Then

there are also the freight-shed facilities and the switching expenses. Switching movements in terminals have been computed as representing an expense per mile of from six to twelve times that incurred per mile on a road haul.

In the terminal cost, there is included not only the cost of the particular movement, but also the question of its contribution to overhead expenses. Then, again, there is the complicated question of the joint cost of the terminal as between freight and passenger services. Aside from large expenditures on passenger stations, it is to be remembered that the passengers move themselves in and out of the terminal; the freight has to be moved.

On the road haul there are the expenses for the wages of the train and engine crews, the cost of fuel, oil and waste. Here, again, there is not only the question of the cost of the particular movement, which, in the case of a trainload movement proceeding continuously thru a division may be computed exactly on a tonnage basis, there is the further and more difficult question of what contribution the commodity moved should make to overhead charges.

Both in the case of the terminal costs and of the road-haul cost the matter is complicated by the fact that different quantities may be concerned; the cost of handling carload and less-than-carload quantities is not the same.

The terminal costs at both ends of the haul are constant whether the haul be for 10 or for 300 miles.

But in the cost of the road haul, the services incidental to the movement do not increase in the same ratio as the mileage. Further, the necessary terminal cost is a greater percentage of the joint cost on the short haul of, say, 10 miles than on the longer haul of 300 miles. As the distance increases the haulage charges tend to vary inversely, while the terminal costs chargeable against the movement also become of less importance per mile. That is to say, on a basis of ton-mile earnings, the ton-mile rate tends to decrease as the distance increases.

In the transshipment of grain cargoes at Depot Harbor, the Parry Sound Railway placed grain on cars at an expense of 25 cents per ton. The Board has recognized that in dividing up a rate to arrive at the reasonableness of the component parts, a terminal expense of 20 cents per ton is not unreasonable. Byers, in his "Economics of Railway Operation," has figured out terminal costs per ton on the basis of New York figures as follows:

Interest and depreciation	28.6
Station services and shipping	41.5
	<hr/>
	70.1

6. *Switching costs at Winnipeg.*—In 1906, the Canadian Pacific made a computation as to switching costs in terminals at Winnipeg on line haul business; that is, on carloads received from or shipped to points outside Winnipeg. The services performed were classified as follows:

(a) The expense of assembling and sorting thru cars was computed at \$3.99 per car. This covered 185,501 cars handled an average movement of 3,600 feet.

(b) The placing, sorting and assembling of cars for local sidings in C. P. R. terminals. This covered 134,202 cars, with an average movement of 7,200 feet. The cost was computed at \$5.32 per car.

(c) The transfer of cars between the Canadian Northern and Canadian Pacific at St. Boniface, destined to or received for siding delivery in either terminal cost \$6.65 per car. This covered 24,961 cars, with an average movement of 20,050 feet.

The cost figures were based on interest and depreciation on the freight terminals; interest and depreciation on the engines used exclusively in the switching service; actual cost of fuel, oil, waste and repairs on these engines; actual cost of wages, superintendence, etc., in connection with terminal work exclusively.

These figures, assuming that the cars were of 30-tons capacity, gave averages per ton as follows: (a), 13.3 cents; (b), 17.7 cents; (c), 22.1 cents. If an average of all the cars switched is taken, it amounts to 16 cents.

7. *Terminal cost in Wisconsin.*—The Wisconsin Commission has worked out the following computations of terminal cost per ton for the different classes of the Western Classification:

Classes.....	1	2	3	4	5	A	B	C	D	E
	\$1.68	\$1.39	\$1.12	84c.	67c.	75c.	58c.	50c.	42c.	33c.

The terminal costs thus computed are arbitrary, since they vary with the value and the rate, instead of being exactly proportioned to cost.

Variations in terminal expenses will be found not only in regard to the cost of terminal properties, but also in connection with the nature of the loading. In a specific case the Wisconsin Commission has computed that when a

Car is loaded with 5 tons freight, terminal expenses are per ton....	\$1.68
Car is loaded with 15 tons freight, terminal expenses are per ton....	.56
Car is loaded with 20 tons freight, terminal expenses are per ton....	.42

8. *Distance as a factor in rates.*—Examples have already been given showing how in rate-making, distance may be minimized. In addition to those already given, reference may be made to the system of group rates. In Illinois, in the movement of coal, points forty miles apart have been grouped under the same rate. Under the Canadian Pacific coal and coke tariff, already referred to, the Lethbridge group, including six shipping points, covers a distance of fifty miles. Examples of either the originating or the destination points being grouped are quite common. Reference may be made to the class and commodity tariffs west-bound to points west of Lake Superior, including the Pacific coast; to the rates on grain and grain products from Fort William to eastern points, Montreal and west thereof; and to the rates on lumber and forest products from the coast and at British

Columbia interior mills to Eastern Canada. One example will serve. In the shipment of lumber east from the British Columbia mills the territory to the head of the Lakes is divided into the 40¢ and 45¢ groups. The first of these extends to Winnipeg and includes, so far as the lines of the Canadian Pacific are concerned, 430 destination points while the second extends to Fort William and includes 149.

The regulative tribunals of England, Canada and the United States have recognized that reasonable grouping is permissible. Grouping arrangements usually come into existence where there are a considerable number of points supplying a commodity of general demand to a common market. Grouping at the destination points may also occur when such a commodity is marketed over a considerable area after a long haul.

But while, because of special conditions, distance may be minimized, it is, in the absence of such disturbing conditions, always to be reckoned with.

9. *Distance basis of rates in Official Classification territory.*—The most interesting example in America of the adoption of the distance basis of rate-making is to be found in the territory of the Official Classification. This territory is subdivided into Trunk Line Association territory, which may, in a general way, be described as the section east of a line drawn through Buffalo, Pittsburgh, Parkersburg, West Virginia, and Norfolk, Virginia: west of this is to be found Central Freight Association territory occupying the

remainder of the Official Classification territory.

In the early seventies the railways located in what is now the territory of the Official Classification were engaged in cut-throat competition. In addition, the water competition of the lake carriers was also felt. As an outcome of this there was worked out a system whereby the Chicago-New York rate was taken as a base rate.

The rate system so built up was concerned with the movement from Central Freight Association territory, in which are located some 8,000 stations. Taking the base rate as 100 per cent, the shorter distance points have rates worked out on a percentage of the base rate. For example, on the movement from Detroit to New York, Detroit has 78 per cent of the Chicago rate. Toledo and Sandusky are 71 per cent points. The rate adjustment works westward to the Mississippi River crossings, where 125 per cent points are to be found.

While the percentage system was adopted in 1876, there have been various readjustments and regrouping since that date. Water competition, market competition, and the effect of the rail movements of north and south lines working in this territory have aided in bringing about the system as it stands today. The result is that instead of percentage points there are percentage groups. While the system was concerned in the first instance with the movement east-bound, it now, in general, applies west-bound as well.

A similar system is made use of in the movement

from points in Central Freight Association territory, intermediate to Chicago, to points in Trunk Line territory intermediate to New York.

The basis on which the percentages are worked out is as follows:

From an assumed rate of 25 cents from Chicago to New York there was first deducted the sum of 6 cents to represent the fixed terminal expenses at the points of origin and destination. The remaining 19 cents represented the assumed charge for the rail haul exclusive of any service at either terminal. This rate being divided by 920, that being the accepted short line mileage from Chicago to New York, yielded a rate per mile of 0.0206 cent for a movement from Chicago to New York under the assumed rate; and this rate per mile was used as the factor for establishing an assumed basis from any particular junction or competitive point on the basis of its mileage to New York. That factor or rate per mile multiplied by the number of miles from the particular point to New York gave an assumed rate for the rail haul from that point exclusive of any terminal service at either end of the movement. To that assumed rate, the six cents was again added to cover the terminal expenses at the points of origin and destination. The result gave an assumed rate from the particular point to New York including the terminal charges, and the percentage which this assumed rate bore to the assumed rate of 25 cents from Chicago to New York determined the percentage of the Chicago rate which the particular point would take on any given class of merchandise.

To illustrate by a concrete example, the short line mileage from Indianapolis to New York is 833 miles. Then 833 times .0206 (cent) equals 17.2 cents. To this add 6 cents for fixed terminals, and a total of 23.2 cents, or 93 per cent of the Chicago assumed rate

of 25 cents, is obtained. Therefore, Indianapolis is a 93 per cent point.

10. *Distinction between local and thru rates.*—A distinction is made between local and thru rates, altho the distinction is not a very exact one. Sometimes a local rate is spoken of as being concerned with a short movement on a given railway, and a thru rate with a longer distance on the same railway. It is more correct to speak of a thru rate as being concerned with a joint tariff movement over two or more railways. Under the Railway Act, the railways are required, as incidental to the movement of thru traffic over two or more lines, to afford facilities for the due and reasonable receiving, forwarding and delivering at the request of any other railway, of thru traffic; and, in the case of goods shipped by carload, of the car with the goods shipped therein to and from the railway of such other company at the thru rate. It is also provided that when traffic is to pass over any continuous route in Canada, operated by two or more companies, the several companies may agree upon a joint tariff for such continuous route. There is the obligation also, that when traffic is to pass over any continuous route from a point in Canada thru a foreign country into Canada, or from any point in Canada to a foreign country, and such route is operated by two or more companies, whether Canadian or foreign, the several companies are to file with the Board a joint tariff for such continuous route. It is similarly provided that a joint tariff is to be filed in respect to a

similar movement from a point in a foreign country into Canada, or from a foreign country thru Canada into a foreign country. Prohibitions are contained in the Railway Act on devices whereby, thru break in bulk, stoppage or interruption of a movement of traffic, an attempt is made to interrupt the continuous carriage.

Provision is made in the Railway Act that where railways subject to the Board's jurisdiction fail to agree upon a joint tariff, the Board may, on the application of any company or person desiring to forward traffic over a continuous route which the Board considers a reasonable and practicable one, require the railways to file a satisfactory joint tariff; or the Board may determine the rate and apportion the same among the companies interested.

It is the practice for railways to file concurrences in regard to thru rate arrangements.

11. *Arriving at a thru rate.*—A thru rate may be made up of the sum of the local rates attaching to the mileage haul on each railway. In most cases, however, the thru rate is less than the sum of the local rates. In each of the local rates, costs for two terminals are chargeable, while in the case of a thru movement over two or more lines there is an initial and a final terminal cost, the other costs in respect of movements from one line to another being in the nature of transfer charges. It has not appeared feasible to lay down any rigid rule covering all cases in regard to the extent by which it is proper that the

thru rate should be less than the sum of the locals. The Board has ruled that where a thru rate exceeds the sum of the locals, it is *prima facie* unreasonable and the burden of justification is on the railway.

It has been recognized that when there is a haul over two or more railways, it is not reasonable to direct that the thru rate shall be identical with the rate for the same mileage over the line of a single railway; for, in the former case, there is a subdivision of the rate between two lines as well as a transfer cost.

In dealing with the reduction of coal rates in the Western Rates Judgment, the Board directed that a reduced scale of rates should be put in; and further directed that on any given movement over two lines the thru rate should not be more than 20 cents a ton over and above that applicable to the thru mileage as for one carrier.

REVIEW

Distinguish between class and commodity rates. How are commodity rates used? To what movements do they usually apply?

Compare the freight rates of Canada with those of England showing the different characteristics which influence the making of rates in each country.

What are the two factors in each rate? What is included under each?

Discuss distance as one factor in rate making.

What is the distinction between local and thru rates? How is a thru rate arrived at?

CHAPTER IX

COMPETITIVE FACTORS IN RATE-MAKING

1. *Competition of lines of different lengths.*—Where a railway has to meet between two points the competition of the shorter mileage of another railway, the short line mileage rate governs of necessity. Examples of this follow:

Fort William to Winnipeg—	C.P.,	419 miles
	C.N.,	436 miles
	G.T.,	449 miles
Portage la Prairie to Winnipeg—	C.P.,	302 miles
	G.T.,	323 miles
Montreal to Toronto—	G.T.,	334 miles
	C.P.,	345 miles
	C.N.,	407 miles
Montreal to St. John, N. B.—	C.P.,	487 miles
	I.C.,	735 miles
Toronto to Ottawa—	C.P.,	256 miles
	C.N.,	258 miles
	G.T.,	375 miles
Toronto to Owen Sound—	C.P.,	122 miles
	G.T.,	164 miles
Woodstock to Goderich—	G.T.,	69 miles
	C.P.,	144 miles
Cornwall to Ottawa—	O.&N.Y.,	57 miles
	G.T.,	109 miles

Differences in mileage as between different routes connecting two points are common. For example, be-

tween Chicago and Kansas City we have the following:

	Miles
Atchison, Topeka & Santa Fe.....	458
Burlington Route	489
Chicago & Alton.....	488
Chicago Great Western.....	597
Chicago, Milwaukee & St. Paul.....	498
Rock Island Route.....	517
Wabash	512

But the competition is not necessarily limited to that existing between lines of slightly differing lengths. Once a railway is built the capital is fixed, and so, in order to obtain a return on the investment, it may participate in traffic which is handled by an exceedingly roundabout route. Between New York and New Orleans there are about one hundred all-rail routes which may compete for business. The shortest is 1,340 miles; the longest is 53 per cent greater. When such a roundabout route competes for this business it must, of necessity, reduce its rate on the principle of what the traffic will bear.

Under such circumstances the anomaly may arise of the rate being controlled by the longer line or route, for the longer line, not being able to give the same dispatch, may have to give a more advantageous rate. Just before the Civil War the Grand Trunk carried flour from Chicago to Portland by rail and thence by boat to Boston in competition with all-rail American lines. From a situation like this may arise so-called "differential" rates.

2. *Differential rates.*—A differential rate arises when two or more competing carriers agree that a prescribed difference shall exist between their respective rates. This may be regarded as a concession to avert a greater cut in rates. When the Canadian Pacific entered the field of thru business, it engaged in the carriage of business to San Francisco by means of its rail route to its Pacific terminus and thence by boat to destination. It took the position that, as it was a broken rail and water route, and was, in its condition, a weak route, a differential should be allowed. It also emphasized the disadvantage under which it labored because of its roundabout route—4,020 miles by rail and water as against 3,270 all-rail.

In 1887, the American lines agreed that on business to San Francisco, the Canadian Pacific might quote rates lower, by agreed differences in cents per class, than the all-rail American lines. At the end of 1892, the Canadian Pacific adopted the principle of charging rates ten per cent less than those of the American lines. The latter contended that this was not a differential, but a “cut” rate, since they had not agreed to it. The matter came to arbitration in 1898, when it was decided that the Canadian Pacific was not entitled to a differential.

The Grand Trunk has a differential freight rate from New York and New England points, all-rail, as against the standard lines to Chicago. It also has differential rates via the Ottawa Division and Depot Harbor, the rates being 10 cents below the first-class

rate from New York and 5 cents below the first-class rate from Boston. American lines handling freight thru Canada also participate in such arrangements. There are in effect over a route composed of the Boston and Maine, Rutland, New York Central, and Michigan Central or Wabash railways the same differential rates as via the Grand Trunk.

3. *Water competition.*—An early example of water competition in the passenger business is set out in an advertisement published in 1788 by the Philadelphia and Baltimore Eastern Shore stage line, which stated that its coaches would carry a passenger from Philadelphia to the Susquehanna River for £1 6 sh., and from that point to Baltimore, 37 miles farther, free of charge. That is to say, on the last 37 miles of the journey it had to meet the competition of water carriers.

In 1892, complaint was made before the English Railway and Canal Commission that the rate on flour and grain from Bristol to Birmingham, a distance of 141 miles, was 8 sh. 6d., while from Birkenhead to Birmingham, a distance of 98 miles, it was 11 sh. 6d. The commission found that the difference in rate was due to efficient railway and water competition.

In the transportation system of the section of North America which may be determined by a line drawn north and south thru Omaha, the effect of the Great Lakes and the St. Lawrence is very important. In general, the average rate which carries a ton one mile on the railway will carry it three miles on the

lakes. If the various grain routes to the seaboard are considered the importance of the alternative water route and its competitive effect will be apparent.

From Chicago, grain may move eastward to the seaboard by the following routes: to Buffalo by rail, thence via the Erie Canal and Hudson River, or by all-rail to New York; to Erie by lake, thence by rail to Philadelphia or Baltimore; by lake to Canadian lake ports, thence by rail to Montreal, St. John, Portland, or Boston; by lake and canal to New York; all-rail to Philadelphia, Boston, New York, Baltimore, and Newport News; by lake, canal and the St. Lawrence. That is to say, there are routes to eight ports on the North Atlantic seaboard, and the lake route has a controlling effect over all.

On the movement from Minneapolis the following routes are available: all-rail to the seaboard via Sault Ste. Marie; by rail to Gladstone, Michigan, and thence by lake and canal or other combination; by rail to Duluth or Superior and thence by lake and canal or other combination.

Shipments of grain from the Canadian Northwest may move: all-rail to the seaboard; by rail to Fort William or Port Arthur and thence by lake to Canadian lake ports and thence eastward by rail; or by lake to Buffalo and thence eastward by rail or other combination; to Duluth by rail and thence eastward by lake and rail; or by lake and canal combination; or by lake, canal and the St. Lawrence.

As has been pointed out, in the movement to the

Pacific Coast, water competition is important. Three years ago the China Mutual, or Blue Funnel Line, was bringing in monthly to British Columbia via the Suez Canal, from three to five thousand tons of package freight. Today, on account of war conditions and eastern competition the importations by this route are less. This is distributed east into Alberta. If the combined ocean and rail rate west to British Columbia is to get a share of this business it must meet this competition. In the movement of cotton piece goods from New England to China over the Canadian Pacific and its connecting steamships on the Pacific, there has to be considered the rate offering to China by way of the Suez Canal. Meat shipments from Canada to London, England, may move all-water to London, or by water carriers to Liverpool and by rail to London. The water rate holds down the combination rate. Shipments of produce from Denmark to Liverpool may move all-water, or may move by water to the east coast and thence by rail to Liverpool. Here, again, the water rate holds down the combination rate.

The Board has recognized that rail carriers may have to meet the competition of water carriers. Its position in regard to water competition is summarized in the *Complaint of the Blind River Board of Trade*, decided March 12, 1913. This stated that, water competition was something over which the Railway Act exercises no control and that rail carriers, subject to the Boards' jurisdiction, subjected to such

competition might, within their discretion, meet it to such extent as they thought fit. A rate forced by water competition is not the necessary measure of a reasonable rate where such competition does not exist.

4. *Changing centers of production.*—In the United States the westward movement of the agricultural centers has had an influence on rates. In the north, it has lessened the importance of Lakes Erie and Ontario as controlling factors. About the time the Erie Canal became an efficient carrier, the Genesee Valley in western New York was important in wheat production. Since the seventies the center of wheat production in the United States has been moving north and westward until now it is west of the Mississippi.

In Western Canada, the wheat area is not reached until at a point some four hundred miles west of Lake Superior. This has increased the traffic importance of the Upper Lakes. Coupled with this is the fact that on account of this northward and westward movement, east and west lines of movement from Georgian Bay are now of increasing importance.

In the southern portions of the United States, the westward movement of the cotton crop, as well as the development of the wheat areas of Kansas and of Oklahoma, have added to the efficiency of ocean competition by way of the Gulf of Mexico.

In the United States this westward movement of grain has created a competitive area extending from the international boundary as far south as Kansas and Missouri and west to the western boundaries of the

Dakotas. Its effects are especially noticeable in connection with the primary grain markets. Grain from the Dakotas and Minnesota is normally tributary to Minneapolis and Duluth; it may move to Chicago. The grain of Missouri is normally tributary to St. Louis; it may also move to Chicago.

5. *Competition of ports.*—As has been seen in discussing water competition, Chicago has some eight possible outlets on the North Atlantic seaboard. With the westward development of American railways the short line mileages to the seaboard have been readjusted. This is illustrated in the following table:

SHORT RAIL DISTANCES FROM SOME OF THE INTERIOR
GRAIN MARKETS AND PACKING-HOUSE CENTERS TO
NEW YORK AND NEW ORLEANS

	To New York	To New Orleans	Saving to New Orleans
Chicago	912	912	..
Duluth	1,390	1,337	53
Minneapolis ...	1,321	1,268	53
St. Paul	1,321	1,268	53
Sioux City	1,422	1,258	164
Omaha	1,402	1,070	332
Dubuque	1,079	988	91
St. Louis	1,058	695	363
Kansas City ...	1,335	878	457

If, beginning at Duluth, a line is traced running south to Lake Michigan and following the western boundary of that lake to its southern extremity, thence swinging southwesterly until the south Atlantic seaboard is reached a little south of the northern boundary of Georgia, it will be found that all points west of

this line are nearer to the Gulf ports than they are to New York.

Of course, the mere question of distance is not the only controlling factor. The question of the volume of traffic moving, the matter of established trade routes, and the amount of ocean tonnage offering at the port are important factors. As between Montreal and New York, the volume of ocean tonnage offering is necessarily an important factor. In the discussions which have taken place with regard to the question of a differential or difference in rates to be allowed Boston, Philadelphia and Baltimore as against New York, the latter city has emphasized the fact that there is an established trade route from its ports by which a large volume of tonnage is constantly moving.

6. *Market or trade competition.*—As industries expand they naturally develop competition in common markets. In the adjustment of their rates, the railways are constantly faced with the question of this competition and of the extent to which they will, by readjustment of rates, extend the area in which industries may compete. Wastes of transportation may arise from this overlapping of markets.

The sugar refining industry of Canada affords a striking example of trade competition. Sugar refineries located at St. John, Montreal and Wallaceburg compete in Toronto and the Canadian Northwest. A sugar refinery located in Vancouver meets the competition of the eastern refineries in Manitoba. The Knight Sugar Refining Company, of Raymond,

Alberta, is also engaged in the manufacture and distribution of sugar in Alberta. What are the boundaries of the respective markets? Where shall the rates meet?

7. *Rates for sugar and oil.*—Sugar moves west from Montreal on a fifth-class rate; it moves from Vancouver on a commodity rate. Under this arrangement the rates meet at Portage la Prairie, Manitoba. When the Board by its order in the Regina Rates Case reduced rates westward from Fort William, complaint was made by the refining company at Vancouver that this, by extending the Montreal territory westward, had resulted in curtailing the territory naturally tributary to Vancouver.

The Imperial Oil Company has a refinery at Ioco, near Vancouver, in which it refines Peruvian oil. From Vancouver to Calgary, a distance of 646 miles, the rate is 84 cents. Caspar, Wyoming, is in a new oil field which ships north by way of Coutts, Alberta, to Calgary, a distance of 886 miles. The rate from Caspar to Calgary is \$1.11. The Imperial Oil Company, being subjected to this competition, and contending that its cost of bringing oil in tank vessels from Peru should be considered as against the lower costs of obtaining oil at Caspar, desired to have its rate to Calgary reduced to 70 cents. The Canadian Oil Company, whose refinery is at Petrolia, also ships into the Canadian West; and its position was that, if on account of competitive conditions, the rate from Vancouver was reduced east, the rate from Petrolia

should be reduced west. The shortest rail route, thru the United States, from Petrolia to Calgary is 1,972 miles. By the all-Canadian route, it is 2,275 miles.

In distributing its products the Imperial Oil Company ships to Manitoba from its Sarnia refinery by way of the Lakes and Fort William. Saskatchewan is supplied from its Regina refinery which obtains its crude oil from Wyoming, while Alberta is supplied by the Ioco refinery.

The Canadian Oil Company applied to the Board to reduce its rates from Petrolia to the Northwest to meet the competition of American oil refiners selling in the same field. It was recognized that the competing companies had certain situation advantages, water competition and low cost of raw material. On this state of facts it was held that the rates, not being challenged as unreasonable, and the trade disadvantages not having been created by the Canadian railways, the direction asked for could not be given. While it is the function of a rate-regulative tribunal to deal with reasonableness of rates, it is not concerned with so equalizing trade profits that all may compete on an even keel.

8. *Rates for complementary commodities.*—Again, in another case it was contended that cheese and bacon are complementary commodities and that the price of cheese in England is regulated by that of bacon. It was, therefore, urged that this should be considered in Canada in fixing the rate basis on export traffic. It was held by the Board that this was a phase

of market competition, and that the extent to which the railways should consider it, if the rates actually charged were not unreasonable, was at their discretion.

Just how the claims of competing industries located on different sections of the same line of railway are to be adjusted is a matter of extreme delicacy and difficulty. The Board has recognized in a case of such competition arising from an industry located on another line, that in the case of brick from Bradford, Pennsylvania, moving thru Canada to Windsor and Detroit, when the Windsor rate on this article was higher than the Detroit rate, the Detroit rate was held down by the trade competition of the similar brick produced at other points in Ohio which were nearer to Detroit. If the brick moving the longer distance from Bradford, was to share in the Detroit business, it had to meet the Ohio rate.

9. *Scope of market competition.*—Market competition is not limited to domestic movement alone. The rate that grain can stand depends upon the price at which grain stands in the world-market. In that market Russia, India, Australia, Argentina, Canada and the United States compete. The wheat of Argentina, which is for the most part grown within four hundred miles of tidewater, and the greater part of whose carriage to Liverpool is, therefore, by water, competes with the wheat of Canada and of the United States which has a rail haul of two thousand miles to the seaboard. Canadian bacon must compete in England

with Danish bacon. Canadian butter competes in England with butter from Denmark and Siberia. Copper from Butte, Montana, competes with the water-borne copper from the Rio Tinto mines.

REVIEW

What is a differential rate? Illustrate.

How does water competition exert an influence on rates?

Show how changing centers of population affects rates?

In competition between ports what influences are important?

Discuss market competition. Is it limited to domestic markets?

CHAPTER X

PHASES OF RATES AND TARIFFS

1. *Freight tariffs and the Railway Act.*—Every tariff carries on its face the serial number of the railway's issue; also the date of issue and the effective date. For example, the Canadian Pacific tariff dealing with stop-off on lumber, issued January 8, 1913, effective February 10, 1913, bears the notation C. P. R. tariff No. E 2119, cancelling No. E 2409. In addition, it has to bear a Canadian Railway Commission serial number—in this case it is C. R. C. No. E 2515. A tariff may be amended by a supplement. In the United States, the Interstate Commerce Commission rule is that the number of supplements which may be outstanding is governed by the size of the tariff. Tariffs filed with the Interstate Commerce Commission must bear an I. C. C. number. Tariffs concerned with the transit trade or with business from the United States to Canada or vice versa bear the serial numbers of both commissions.

Under the Railway Act, freight tariffs are classed as standard, special and competitive.

2. *Standard tariff.*—The standard freight tariff or tariffs specify the maximum mileage tolls to be charged for each class of the freight classification for all distances covered by the railway. The distances

are expressed in groups. The Railway Act permits relatively greater distances to be included in these groups for the longer than for the shorter hauls. The standard freight tariff has to be filed with the Board for its approval. When it is approved, it must be published in two consecutive weekly issues of the *Canada Gazette* before it can become effective.

3. *Steps in development of standard tariffs.*—The Standard Freight Tariffs of the Canadian Pacific may be taken as representative of other railways operating in the same territory, the only point of difference arising is in respect of the stations forming the geographical limits of a given standard freight territory.

Before the decision of the Board in the Western Rates Case, in 1914, there were eight groups of standard tariff territory, two of which were east of Port Arthur and Fort William; the balance were in the West. Those east of Port Arthur and Fort William were: (a) from Sudbury east to the Atlantic; and (b) from Sudbury west to Port Arthur and Fort William. The eastern standards are on what is known as the Canadian Freight Association Scale. Practically all the railway mileage in Eastern Canada is on this basis.

The development of standard tariffs in Western Canada began with the issuance of the Canadian Pacific tariff issued May 1, 1881, which was applicable in Manitoba. This tariff was adopted apparently from rates then applying in the adjacent states of the American union. The rates were built up on the

Joint Northern Classification then in force in the adjoining territory. In this classification, first class was double fourth. When the mileage extended westward, the standard tariff was extended. By 1894, a standard mileage tariff known as No. 270 had developed. The modifications by way of reduction referred to in another connection, started from this as a base. The tariff in question also applied in British Columbia, so far as the rates were concerned. The base, however, was different. In building up the mileage, the railway considered that the higher cost of operation in the mountains justified assumed mileage being used. From Vancouver to Yale, at the head of navigation on the Fraser River, actual mileage was used. From Yale to Revelstoke, each mile counted as $1\frac{1}{2}$ miles; while from Revelstoke to Canmore each mile counted as 2 miles. When the Crow's Nest extension was made, it also was put on the basis of 1 mile counting as 2.

4. *Standard scales in the West.*—West of Lake Superior the standard scales which applied were as follows:

(1) The Manitoba scale, which is in effect thruout Manitoba, excepting the Canadian Northern's Le Pas Line, and in Ontario west of and including Port Arthur. Its general basis is 15 per cent lower than the Canadian Pacific's maximum mileage tariff No. 270 of 1894, which covered the entire territory between Lake Superior and the Rockies. This is the reduction which was required to be made by the Canadian Northern as a result of the Bond Guarantee Act of Manitoba, Chapter 39 of the Statutes of 1901.

(2) The Saskatchewan scale, in effect thruout Saskatchewan, also in Alberta, excepting the short Canadian Pacific Mountain section of 50 miles between Canmore and Laggan, and the Grand Trunk Pacific west of Thornton. It applies also on that portion of the Canadian Northern's Le Pas Line within Manitoba. This scale is generally $7\frac{1}{2}$ per cent lower than the uniform "Prairie" tariff No. 270 above mentioned, the reduction being complementary to that made in Manitoba by the Canadian Pacific. It was voluntary on the part of the Company which was, at that time, the only Company operating in Saskatchewan and Alberta. This rate basis was adopted by the Canadian Northern in those sections of the two Provinces opened up later on by that Company.

(3) The "Mountain" scale, in effect on the Canadian Pacific's rail lines west of Crow's Nest and Canmore; also on the following railways under Great Northern control, viz., the Crow's Nest Southern, the Bedlington & Nelson, the Red Mountain, the Nelson & Fort Sheppard, and the Vancouver, Victoria & Eastern, east of Kilgard, B. C.

This latter scale is built up on the same prairie mileage tariff of 1894; but, owing to the greater cost of construction and operation in British Columbia, one mile is counted as two prairie-tariff miles for distances up to 220 miles; those over 220 miles, and up to the schedule's limit of 750 miles, being graduated on a somewhat lower tho indefinite basis, so that for 750 miles the first-class rate is \$2.42 instead of \$2.95 as it would be on the two-for-one basis, being a mileage increase of $46\frac{2}{3}$ per cent. No abatement in British Columbia followed the prairie reductions of 1902.

(4) The "Lake" scale between ports of call and landings of the Canadian Pacific Railway steamers and barges on Arrow, Kootenay, Slocan, Trout and Okanagan Lakes and the Columbia River; also on the two remaining Great Northern controlled properties; viz., the New Westminster Southern, and the Vancouver, Victoria & Eastern Railway, west of Kilgard, B. C.; and on the lines of the British Columbia Electric Railway Company.

This scale is virtually the flat prairie tariff No. 270 of 1894. The Great Northern's maximum rates on the two rail sections named are the same as those of the Canadian Pacific on the inland water stretches, because the Board required them to be so,—these lines being in the Vancouver-Yale district; and the same is true of those lines of the British Columbia Electric Railway Company which are subject to the jurisdiction of the Board.

(5) The "Lake-and-rail and Inter-Lake" scale, applicable to traffic interchanged between the Kootenay Lakes, and between the steamer landings and rail stations of the Canadian Pacific in West Kootenay and the Boundary district. This scale is considerably higher than the last mentioned "Lake" scale, but somewhat lower than the "Mountain" scale (No. 3).

5. *New scales adopted.*—The judgment in the Western Rate Case directed that these five western standard scales should be reduced to three to be known as The Prairie, The Pacific, and The British Columbia Lakes Standard tariffs.

6. *Prairie Standard tariff replaces Saskatchewan.*—The Prairie Standard tariff was made to cover the section formerly covered under the Saskatchewan scale. The maximum basis was to be that of the standard tariff of maximum mileage rates then in force in Manitoba and New Ontario. Formerly, the initial mileage group west of the Lakes was ten miles. This group was broken up so the initial group is now five miles. This reduction, and the re-grouping brought in, meant considerable reduction in regard to Alberta and Saskatchewan.

The western boundary of the territory covered by this standard extends to Canmore and Crow's Nest,

on the Canadian Pacific to Tollerton, Alberta, on the Canadian Northern, and to Thornton, Alberta, on the Grand Trunk Pacific.

The tariff covers a mileage of 2100 miles. Up to 100 miles the groups advance by five-mile steps, from 100 to 500 there are ten-mile steps, from 500 to 1,500 there are twenty-five-mile steps; the balance of the mileage is divided up into fifty-mile groups. The result of this was that the hitherto existing Manitoba scale was adopted as the scale for the Prairie Provinces.

7. *Extension of Manitoba scale.*—The Board, dealing in the Regina Rates Case with the question of discrimination as between Winnipeg and Regina, had recognized the propriety, within limits, of the extension of the Manitoba scale. It was now recognized that the class of commodities offered for carriage, and the climatic and operating conditions of the districts being largely the same, it would not be fair on the ground of density of traffic to give Manitoba an advantage which, in a great degree, was derived from a volume of tonnage arising in the first instance in Saskatchewan and Alberta.

8. *Pacific Standard tariff.*—In delimiting the Pacific Standard Tariff it was recognized that both the construction and railway operation thru the mountains are much more expensive than on the prairies. The Pacific Standard covers 2,200 miles, and its eastern limits begin at the points already indicated as the western boundary of the Prairie Standard. The rate

groups are the same as in the case of the Prairie Standard. The larger part of the mileage grouped under the Pacific Standard is concerned simply with the provision of an interchange movement. The extreme movement local to British Columbia is 750 miles. In consideration of the difficulties of operating mountain mileage, cost, etc., the rates are weighted—that is to say, up to a distance of 750 miles each mile is given the rate chargeable on the Prairie Standard for $1\frac{1}{2}$ miles. Beyond this, the rate is held down on the longer movement by being tied up to the Prairie Standard rates. For distances over 750 miles the Pacific Standard rates are made by adding the differences of the Prairie standard twenty-five-mile groups. For example:

750 miles Prairie Standard is 161 cents first-class

775 miles Prairie Standard is 164 cents first-class

a difference of 3 cents. As 750 miles on the Pacific standard is 209 cents first-class, the rate for 775 miles is made by adding the above difference of 3 cents, giving a rate of 2.12 cents. From what has been said, it is apparent that it is on the interchange movement between standard tariff territories that the effect of this is felt.

9. *British Columbia Lakes Standard tariff.*—The British Columbia Lakes Standard tariff applies locally between ports of call on the Arrow, Slocan, Kootenay, Trout and Okanagan Lakes and the Columbia River. It does not apply where rail

haul intervenes. The tariff covers 150 miles. Up to 100 miles the groups advance in five-mile steps, beyond that distance there are ten-mile steps. This was amended in September, 1916, by the dropping of Trout Lake on account of the elimination of ports-of-call on that lake.

10. *What standard rates exclude.*—The standard rates are exclusive of marine insurance. Bulk freight will not be accepted for shipment to or from points where a boat haul is involved. Heavy and bulky articles moving under the standard tariffs in Western Canada will be accepted under special contract only.

11. *Where maximum rates of Pacific Standard apply.*—The maximum rates of the Pacific Standard are chargeable between: (a) any two rail stations, both of which are west of the western termini inclusive of the Prairie Standard tariff; (b) any station so situated, and any advertised port-of-call on the Arrow, Slocan, Kootenay, Trout and Okanagan Lakes, and the Columbia River; (c) any station or port of call so situated, and any point east of the western termini of the Prairie Standard Tariff to and including Port Arthur.

12. *When combination rates apply.*—The tariffs apply both on local and interchange traffic. In the handling of freight under the standard tariffs between points east and west of Canmore or Crow's Nest, if it is found that a combination of rates to or from Canmore or Crow's Nest, and stations east thereof, under the Prairie Standard, and rates to or from these

points under the Pacific Standard, makes a lower thru-rate than would result from the application of the thru-rate under the Pacific Standard, then, such combination is authorized to apply.

13. *When standard mileage tariffs apply.*—The standard mileage tariffs referred to above apply in the absence of special tariffs quoting lower rates. They also apply on interchange business, the rule being that in a movement from a higher tariff division to a lower, or vice versa, the higher rate applies.

14. *Why rate scales differ.*—Reference to the figures given in connection with the standard tariffs will show that the rate scales are different in different sections. For the purposes of comparison the table given below covering rates for the first 100 miles may be consulted. It will be noted that in the sections numbered 2 to 5, the fourth-class rate is one-half of the first. As has been pointed out, the classification in this area is built up on fourth class instead of fifth, as in the east. The B. C. Lakes Standard is on the same basis as the Prairie Standard; since the former being a matter of lake operation, there are not the special conditions of cost present which have been taken as justifying a higher basis on the mountain territory of the Pacific Standard.

15. *Standard rates are maximum rates.*—It must be remembered that these standard rates are simply maximum rates and do not necessarily indicate the actual rates under which shipments move. They apply only where there are no lower special tariffs. It

is impossible to make any general statement of how much lower the special tariffs are than the standard tariffs for any particular section. It is safe to say that from 90 to 95 per cent of the traffic moves on rates lower than standard.

16. *Special and competitive tariffs.*—Special and competitive freight tariffs do not require the approval of the Board before becoming operative. They come into force upon filing the tariffs with the Board, in compliance with the regulations of the Railway Act.

RATES FOR 100 MILE DISTANCES

	Rate per 100 lbs. 1st class	Per cent of No. 1	Rate per 100 lbs. 4th class	Per cent of No. 1	Rate per 100 lbs. 6th class	Per cent of No. 1	Rate per 100 lbs. 10th class	Per cent of No. 1
(1) Sudbury & East.....	36	...	23	...	16	...	11	...
(2) Sudbury-Pt. Arthur..	48	136	24	104	17	106	11	...
(3) Prairie.....	46	127.5	23	...	18	112	12	109
(4) Pacific.....	60	166	30	130	21	131	14	127
(5) B. C. Lakes.....	46	127.5	23	...	18	112	12	109

A special tariff reducing existing rates, in addition to being filed with the Board, must be on file for three days before the effective date of the tariff in every station or office of the company where freight is received, or to which freight is carried under the tariff in question. There must be a public notice at such place stating where the tariff may be seen. In the case of increases of rates there is a similar provision except that thirty days' public notice is required. Competitive tariffs are not under any obligation as to

public notice, this matter being left to the discretion of the Board to fix such regulations as it may deem necessary.

To meet temporary emergency conditions, special rate notices may, without publication, be issued quoting reduced rates on specific shipments between points on the railway which are not competitive. It is provided that the railway may issue these rate notices at its discretion, to help to create trade or to develop the business of the company, if it be in the public interest and not otherwise contrary to the provisions of this act. The special rate notice has to be filed with the Board, and is operative only for a specific shipment. It must also specify the reason for issuance and the rate which would otherwise have been effective.

In practice, the railways have been permitted to provide for the prompt shipment of any freight which may unexpectedly be offered and for which no suitable tariffs have been prepared, there being the condition that the filing and publication of the tariffs shall be immediately proceeded with. Such special notices may also cover the disposition of a shipment which has been forwarded to a wrong destination, or which may have been refused by the consignee. Small sample shipments, for example, of ore for testing purposes, may be carried under such notice, actual weight at carload rate applying.

Formerly such a notice might cover the removal of live stock by rail from exhausted grazing grounds to new pastures on the ranches of the Northwest for sub-

sequent reshipment to the markets. With the change in agricultural conditions the need for this has passed. The railways are also permitted under such an arrangement to carry fuel for their employes at reduced rates.

17. *Transcontinental rates.*—When the Canadian Pacific entered the field of thru traffic at the Pacific coast it adopted in a general way the system as to terminal points which it found in use on the American railways to the south. These had been affected by various rate adjustments in which the competition by way of the Isthmus of Panama and Cape Horn had played an important part. The movement by way of Cape Horn is, so far as the movement from the eastern to the western coast of North America is concerned, of diminishing importance. Since 1900, a few chartered sailing vessels have each year carried cargoes around the Horn. The Panama Railway has been overshadowed in public interest by the Panama Canal. But the railway has been an important factor. Before it became the property of the United States government, the United States railways had been able to make it simply a differential rate route. The route by way of the railway across the Isthmus of Tehuantepec is of importance, and will become more so in the future. At present, the internal conditions of Mexico makes its value negligible.

18. *Transcontinental tariff now filed by Canadian Freight Association.*—Formerly, the transcontinental tariff covering the movement from Eastern Canada to

British Columbia coast-points was filed by an American agent acting for both the Canadian and the United States roads concerned. Since September, 1916, the tariff is filed on behalf of the Canadian Freight Association, by the Chairman of that Association. It shows as participating carriers some thirty-eight Canadian railways, thirty-one United States' railways, and eleven steamship companies.

19. *How rates are quoted.*—The rates quoted in the tariff are from specified rate points in eastern Canada, which rate points give the rates for the respective groups to seventy-four British Columbia Pacific coast points, or terminal points, and to twenty-nine other points which take rates made up by adding arbitraries of 5 cents per 100 lbs. C.L. and 10 cents L.C.L. to the rates to Pacific coast points.

20. *Water competition governs rates to terminal points.*—Rates to the terminal points are made on the basis of water competition. In April, 1915, Nanaimo, on Vancouver Island, was taken out of the terminal point list, its rates thereafter being built up by the addition of the arbitraries above indicated. Victoria and Esquimalt remained as terminal points. In justifying the difference in treatment, the railway said that the rates from Eastern Canada to the terminal points were made to meet water competition; that the competition at Nanaimo differed from that at Victoria and Vancouver; and that there were no direct sailings from Panama to Nanaimo.

21. *Basing point changed on transcontinental class*

rates.—Formerly the rates charged from Eastern Canada on transcontinental freight were based upon the rates charged by American railways on transcontinental traffic originating at Chicago. While the traffic originating in the eastern States is subject to keen water competition, the water competition in Eastern Canada is much less active. The class traffic originating at Chicago is also less influenced by water competition. The similarity in respect of lessened water competition was considered by the railways as a justification for Chicago's being taken as a basing point. To the class rates from Chicago were added certain arbitraries, or rates not proportioned to distance, to cover the haul east thereof from points in Eastern Canada. For example, these arbitraries were classed as follows in cents per hundred pounds, in the case of the movement from Montreal or Toronto:

$\frac{1}{20}$ $\frac{2}{18}$ $\frac{3}{15}$ $\frac{4}{13}$ $\frac{5}{10}$ $\frac{6}{8}$ $\frac{7}{8}$ $\frac{8}{8}$ $\frac{9}{-}$ $\frac{10}{8}$

The class rates to British Columbia are no longer arrived at in this way. The rate from the Toronto-Montreal group is the basing rate, and other points east exceed this rate by certain arbitraries. The Canadian Pacific established the rate from this group at \$3.62, first class, an increase of 2 cents per 100 pounds over the hitherto existing transcontinental rate. The other classes, however, are scaled on the Canadian Classification with resulting lower rates than under the Western Classification which applies from Chicago. The result is that while from the Toronto-

Montreal group the first-class is increased 2 cents, the other classes are reduced in cents per 100 pounds as follows:

$\frac{2}{16}$ $\frac{3}{28}$ $\frac{4}{26}$ $\frac{5}{27}$ $\frac{6}{40}$ $\frac{7}{37}$ $\frac{8}{20}$ $\frac{9}{-}$ 10%

22. *Group system used for quoting.*—A grouping system is used in quoting the rates; and in the above rearrangement the groups east of Montreal have been made smaller. In this way, the arbitraries over the Toronto-Montreal group have been increased. But aside from the first-class rate, there has been a general reduction in the class rates.

The rates and grouping are as follows in cents per 100 pounds:

GROUPS	1	2	3	4	5	6	7	8	9	10
Toronto-Montreal ..	362	297	232	184	158	145	111	98	...	98
Sherbrooke	374	308	241	192	164	151	116	103	...	102
Québec	376	309	243	193	165	152	117	104	...	103
Cacouna	380	313	246	195	167	154	120	107	...	107
St. John	382	315	247	197	168	155	121	108	...	108
Mulgrave	388	321	252	201	171	158	124	111	...	111
Sydney	392	324	255	203	173	160	126	113	...	113

The ninth class, as it covers live stock, is not given.

23. *Class rates negligible.*—While class rates are thus quoted, they are in the main negligible, since commodity rates are quoted on some 3,300 items, which cover in their inclusive sweep not only flour, furniture, iron and steel and their manufactures, tobacco, and canned vegetables, but also hobby horses, cotton night-gowns, ping pong sets, egg trays, wax tapers and yeast.

24. *Differential lake-and-rail routes.*—During the season of lake navigation, there is a differential lake-

and-rail route; the rates include marine insurance. Formerly the lake-and-rail rates, say, from the Montreal-Toronto group to Vancouver were published on a basis of 10 cents, 5 cents, 10th class, lower than all rail rates. The present rates between these points are as follows:

	1	2	3	4	5	6	7	8	9	10
All rail	362	297	232	184	158	145	111	98	...	98
Lake-and-rail.....	337	277	218	174	152	140	106	93	...	93
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Difference	25	20	14	10	6	5	5	5	...	5

These rates apply not only to the coast but are also a maximum to intermediate points; the intermediate rates are scaled down. The lake-and-rail class rates from the initial Montreal-Toronto group to Vancouver, and to intermediate points as well, are made by adding, in each case, to the lake-and-rail rate from the initial group to Port Arthur, the rail rate from Port Arthur to the point beyond. The rate is built up as follows:

	1	2	3	4	5	6	7	8	9	10
Toronto-Montreal to } Port Arthur	50	44	38	31	25	25	20	20	...	20
Port Arthur to } Vancouver	287	233	180	143	127	115	86	73	...	73
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	337	277	218	174	152	140	106	93	...	93

The rate is thus a combination which gives the advantage of the water competition to points beyond.

Comparison ¹ may be made of the all-rail class rates from Toronto to Port Arthur with the lake-and-rail rates between the same points.

¹ While on the local lake-and-rail movement Montreal is 10 cents higher than Toronto, on the thru movement they have the same rate.

	1	2	3	4	5	6	7	8	9	10
All rail	105	86	70	50	42	36	36	35	...	35
Lake-and-rail.....	50	44	38	31	25	25	20	20	...	20

25. *Commodity traffic east-bound, important.*—In the movement east-bound from British Columbia to Eastern Canada, class rates are built on the same general system as on the west-bound movement. Here, again, the commodity movement is the important one. Aside from Oriental traffic, about 80 per cent of the transcontinental traffic east-bound is concerned with lumber, shingles, canned goods, canned salmon and pickled fish. Practically all the movement is on commodity tariffs.

REVIEW

What is a standard tariff?

What new scales were adopted as a result of the Western Rate Case decision?

What regulations govern standard and competitive tariffs?

How are transcontinental rates fixed? What change in the basing point was made?

Discuss differential lake-and-rail routes.

CHAPTER XI

TOWN TARIFFS, EXPORT AND IMPORT RATES

1. *Distributive rates.*—In the early days in Ontario the Grand Trunk, competing with the Great Western and its connecting boat lines, put in competitive rates to common (that is, competitive) points. In the handling of merchandise, the establishment of jobbing or distributing points naturally develops. The railways have shown recognition in their rates of such points. While a question may be raised as to what extent it is justifiable to grant a distinction in rate between a place which has so established a distributing business and one which has not, the railways have in granting such rates recognized that they have not only the carload business in, but also the distributive business out, normally in less-than-carloads.

Distributive tariffs are of such a nature that the railways are constantly faced with demands for readjustments. A new jobbing center may develop. It naturally desires, when distributive rates are in effect, that it should have such rates. But distributive rates and the recognition of distributive areas tributary to certain centers are like a pair of scales. Anything that affects one scale affects the level of the other; this one change may lead to the demand for another.

The tariffs given to distributing points are known as "town tariffs." The various points so treated may be either distributing or manufacturing centers. In effect, they may be regarded as rate-basing points. The town tariffs in Ontario and east to Montreal were readjusted by the order of the Board in the International Rate Case which was decided in 1907.

2. *International Rate Case.*—It had long been a source of complaint that the rates eastward to Montreal exceeded those westward from Montreal. Application was made by the Toronto Board of Trade that this discrepancy be removed. It developed that in order to deal properly with the matter it was necessary to have a general rearrangement of the class rates between all points. Coupled with this complaint was a further complaint as to international rates on the ground that the rates from Detroit were lower than the rates from Windsor, just east across the river. It was recognized that the reduction of the rate from Windsor would necessitate the scaling down of rates to intermediate points. So the question of the complaint advanced by the Toronto Board of Trade as to Montreal rates westbound versus Toronto rates eastbound became interrelated with the complaint of the Canadian Manufacturers' Association as to international rates.

The traffic from the Detroit River was affected by both the Official and the Canadian Classification. It was impossible to harmonize these, as they are built up in a different manner. The existing first-class

rate was taken from Detroit, and the rates from Canadian points eastward were scaled down accordingly. It was then directed that the rates, from Canadian points on the Detroit and St. Clear River frontier, to all points east to the Atlantic and north to the Ottawa River, should in no case exceed the rates from Detroit and Port Huron.

Direction was given that the town tariffs, then in existence, be reduced so as to place them all on the same mileage scale. The scale directed to be adopted covered up to 560 miles and is commonly known as Schedule A. It may be summarized as follows:

- (1) Up to 5 miles, 8 cents per 100 lbs. 1st class.
- (2) 6 to 20 miles, 2 cents increase for each 5-mile step
- (3) 21 to 80 miles, 2 cents increase for each 10-mile step
- (4) 81 to 110 miles, 2 cents increase for each 15-mile step
- (5) 111 to 200 miles, 2 cents increase for each 20-mile step
- (6) 201 to 440 miles, 2 cents increase for each 30-mile step
- (7) 441 to 560 miles, 2 cents increase for each 40-mile step

It was found necessary in making this rearrangement to re-group the existing rate points. The mileage provided for in the scale covered as far as Montreal. Beyond Montreal to Quebec the thru rates from the territory between Windsor and Toronto and from the northern portion of the westerly peninsula of Ontario were to be built up by the addition of arbitraries.

The readjustment thus brought about represented roughly a reduction of 25 per cent from the standard rates up to 500 miles. The effect of the reduction

went further. It was not limited to the town tariff points alone. From and to intermediate points, the town tariff applies until the standard tariff becomes lower.

3. *Rate readjustment and group rearrangement.*—Under the Eastern Rates Judgment of the Board in 1916, a readjustment of these rates was authorized. It was found justifiable to increase rates 2 cents per 100 pounds on first-class, the remaining classes to be scaled in accordance with the relation between the standard class rates. There was the further proviso that if rates of any railway system are already equal to those thus permitted no rates were to be increased, and that if the rates were already higher they were to be reduced accordingly. A rearrangement of groups was also made as follows:

Group 81—95 miles changed to 81—100 miles
Group 96—110 miles changed to 101—120 miles
Group 111—140 miles changed to 121—140 miles

The effect of this change was to deny an increase for distances 96—100 and 111—120 miles of the scale.

4. *Town tariffs in the East.*—East of Montreal in the Province of Quebec and in New Brunswick and Nova Scotia town tariffs also exist. These cannot be expressed in terms of any general percentage of the standard tariff.

In the westward movement from eastern Canada to the Northwest there is not only the all-rail movement, but also the lake-and-rail movement, which is on a

low basis to meet the lake competition. Goods may be carried all-rail or by lake-and-rail, or between certain points by all-water. For example, the all-rail rate fifth class from London to Sault Ste. Marie is 35 cents. By lake-and-rail, it is 25 cents. In the movement by water of independent water carriers, Sault Ste. Marie and Fort William are blanketed on bar iron and other iron and steel commodities with a rate of 17½ cents. The railways have met this competition by quoting a lake-and-rail commodity-rate of 19½ cents to the same points.

While on the lake-and-rail movement thru rates are worked out by the railways and their connecting water carriers, the independent boat lines—for example, the Inland Lines, the Canadian Lake Line, and the Merchants' Mutual—do not make joint rates with the railways. They base on the same rates from Fort William or Port Arthur as the lake-and-rail lines do on traffic beyond. While, of course, from December to the end of April the lake route is closed, it is contended by the railways that its competitive effect is pervasive thruout the year. For goods can be and are shipped forward during the navigation season to the head of the Lakes, where they are warehoused and shipped out from time to time during the winter.

5. *Some objections overcome.*—When distributing business developed in Winnipeg, Eastern Canada complained of competition. Take a point, say, 100 miles west of Winnipeg, and the situation arose that the thru rate on a carload of groceries from

Hamilton to this point was less than the combination of the rate from Hamilton to Winnipeg and the local out. As an outcome of much discussion and agitation, Winnipeg was given the "traders' tariff" arrangement. Under this tariff, merchandise, when shipped into Winnipeg from an eastern point and warehoused, paid the balance of the thru rate from Winnipeg on being shipped out. That is to say, to a point 100 miles beyond, it would get the same rate treatment as if the shipment had moved direct from, say, Hamilton to the point 100 miles beyond. There had, however, to be paid in connection with the stop-over the cartage and handling charges. These averaged 8 cents per 100 pounds on the first four classes and 6 cents on the fifth class. Under this arrangement 95 per cent of the freight westbound from Winnipeg moved on this tariff. Subsequently, Brandon, Regina and Calgary were given the same arrangement. In 1907, this tariff arrangement was found by the Board to be discriminatory, since it was limited to certain places, consignors and consignees.

6. *Town tariff system related to rate reductions.*—The town tariff or distributing tariff system as it developed in the West is related to various reductions in rates which took place from time to time.

By the Crow's Nest Pass agreement of 1898, reductions were made by the Canadian Pacific in consideration of a subsidy. On the thirteen classes of merchandise mentioned in the legislation, reductions of 10 per cent were made on eleven classes, 20 per cent

on coal oil and $33\frac{1}{3}$ per cent on green and fresh fruits. The Act also called for a reduction of 3 cents per 100 lbs. on grain and flour rates. As a result, the grain rate was reduced in September, 1899, to 14 cents on the haul from Winnipeg to Fort William. The agreement between the Manitoba government and the Canadian Northern has already been referred to. As a result of the agreement, the 14-cent rate on grain from Winnipeg to Port Arthur and Fort William became 10 cents, and reductions approximating 15 per cent of the tariff rates on all other freight were made. This reduction was made by the Canadian Northern, but it was met in Manitoba by the Canadian Pacific, the rates in general thus becoming 85 per cent of those hitherto existing. The Canadian Pacific, of its own volition, made a reduction of $7\frac{1}{2}$ per cent in the rates in Saskatchewan and Alberta. Scaling, as they do, 15 per cent off the standard so reduced, town tariffs in Manitoba were reduced to 70 per cent of the standard and in Saskatchewan and Alberta to $77\frac{1}{2}$ per cent.

7. *Western Rates Case causes tariff rearrangement.*—By the judgment in the Western Rates Case, the following rearrangements of the town tariffs were directed:

(1) From recognized distributing points in Prairie territory west of Fort William to points within the same territory west of Fort William, the first-class rates shall not be more than 85 per cent of the first-class rates in the Prairie Standard tariff.

(2) From recognized mainland distributing centers in British Columbia, other than Vancouver and New West-

minster, to mainland points in Pacific territory, all-rail or part rail and part inland waters, also from the said distributing centers to points in Prairie territory and *vice versa*, the first-class rates shall not be greater than the first-class rates in the Pacific Standard rate less 15 per cent of the Prairie Standard.

Thus, in the Prairie Provinces, the town tariffs are uniformly 15 per cent below the Standard rates. In the case of British Columbia, the percentages of reductions vary.

8. *Town tariff points*.—The following list sets out practically all the town tariff points in Canada:

NOVA SCOTIA AND NEW BRUNSWICK

Halifax, N. S.	Woodstock, N. B.
St. John, N. B.	Fredericton, N. B.
West St. John, N. B.	Campbellton, N. B.
St. Stephen, N. B.	Edmundston, N. B.

QUEBEC

Montreal and its grouped terminals.	St. Hyacinthe.
Lachine.	St. Rosalie Junction.
Dominion.	Sherbrooke.
St. Johns.	Lennoxville.
Iberville.	Quebec.

ONTARIO

Aurora.	Brantford.
Barrie.	Bridgeburg.
Belleville.	Brockville.
Berlin.	Chatham.
Bowmanville.	Cobourg.
Collingwood.	Peterboro.
Cornwall.	Petrolia.

ONTARIO.—*Continued.*

Depot Harbour.	Port Dalhousie.
Deseronto.	Port Hope.
Doon.	Prescott.
Dundas.	Preston.
Elora.	St. Catharines.
Fergus.	St. Marys.
Galt.	St. Thomas.
Gananoque.	Sarnia.
Guelph.	Stratford.
Hamilton.	Sudbury.
Hespeler.	Sault Ste. Marie.
Ingersoll.	Thorold.
Kingston.	Toronto.
Lindsay.	Trenton.
London.	Walkerton.
Meaford.	Waterloo.
Merritton.	Welland.
Midland.	Welland Junction.
Napanee.	Whitby.
Newmarket.	Warton.
Niagara Falls.	Windsor.
North Bay.	Wingham.
Orillia.	Woodstock.
Oshawa.	Port Arthur.
Ottawa.	Fort William.
Owen Sound.	Westfort.
Parry Sound.	Kenora.
Paris.	Keewatin.

MANITOBA

Winnipeg.	Brandon.
St. Boniface.	Portage la Prairie.

SASKATCHEWAN

Regina.	Battleford.
Moose Jaw.	North Battleford.
Yorkton.	Prince Albert.
Saskatoon.	

ALBERTA

Calgary.	Strathcona.
Weyburn.	Edmonton.
Camrose.	Medicine Hat.
Lethbridge.	

BRITISH COLUMBIA

Fernie.	Revelstoke.
Cranbrook.	Westminster.
Nelson.	Vancouver.
Rossland.	Victoria.

9. *Export and import rates.*—In England the question of export and import rates has engaged much attention. In 1903, the Railway and Canal Commission, in the Spiller & Baker Case, recognized that a low “shipment” rate was necessary to obtain traffic. It was considered impossible to raise this rate, and the dissimilarity of circumstances did not warrant a comparison of the higher domestic rate with the lower export rate. A briquette manufacturing firm claimed that it was unduly discriminated against, since it paid the domestic rate on its raw material, while the manufactured product came into competition abroad with coal carried on a low export rate. Here, again, the commission upheld the principle of export rates, and further found that the railway was under no obligation to regulate its charges with reference to the ultimate competition complained of.

10. *Low import rate justified.*—While in general there has not been great objection to an export basis lower than that of the domestic rate, England, being an exporting nation, has objected very strongly

to low import rates which, it has been considered, bear unfairly on the domestic trade that pays the higher rate. In the United States, the Interstate Commerce Commission, in the Alabama Midland Case, in which there was found to be a lower rate basis on the rail portion of the import rate than was granted on the same portion on a domestic movement, held that the circumstances were not dissimilar, and that the difference in treatment was, therefore, discriminatory. The Supreme Court, however, overruled this decision, holding, in effect, that the import rate was a water-compelled rate thruout, and that the Commission had not given due consideration to the competitive factors affecting the rate.

11. *Problem in Canada.*—On the export trade in Canada's staples, there comes into operation the competition of markets. What Canada's grain can pay depends upon the conditions in the world market, and the rate must be adjusted with reference to these conditions. Further, the rail portion of the export rate is concerned only with a portion of the total haul, while in the case of the local rate no other element is involved. It has been ruled by various regulative bodies that a division of a thru rate is not a necessary measure of the reasonableness of a local rate. Similar reasoning is applied to export rates.

In the export movement, commodity rates are quoted on many staple articles. For example, there are export commodity-rates to St. Johns on cattle, sheep and hogs, grain (all-rail), grain (lake-and-rail),

apples, pears, lard and cured meats. From Montreal, there are export commodity-rates on the same articles and, in addition, on pine and larch lumber.

The Board has recognized that there is, within reason, a justification for a lower basis on export than on domestic business. It directed, in 1910, the reinstatement at Montreal of export rates on lumber, lower than the domestic rates. By an order of 1911, it directed an extension of the territory from which these reduced export rates on lumber should apply. While the export rates via Montreal have varied, they have generally been held down by the New York rates as a maximum. It was recognized, in 1905, that the existing practice of computing export rates from Ontario points on the basis of percentages of the existing export rates from Chicago to New York was not unreasonable, and a direction was given as to the groupings and percentages that should apply in the case of all export traffic.

12. *Export traffic on Chicago-New York base.*—The following groups are arranged in percentages of the New York rate:

- (1) Toronto, east to Kingston and Sharbot Lake, 70 per cent.
- (2) North and west of Group 1 to St. Thomas and Port Stanley, 73 per cent.
- (3) North and west of Group 2 to the St. Clair and Detroit Rivers, 78 per cent.
- (4) North and west of Group 3 to Teeswater and Wingham, 82 per cent.
- (5) North of Group 4 to Wiarton, Owen Sound, Kincardine, etc., 85 per cent.

- (6) North of Elmsdale to and including North Bay, 90 per cent.

It was provided that this arrangement was to cover all export traffic including grain and grain products; and the revised grouping was to continue as long as the lines operating in Ontario found it expedient and convenient to continue the existing arrangement of computing export rates in percentages of the Chicago-New York rate.

13. *Import rate anomalies.*—While import traffic on a low import rate basis does not elicit disapproval at a terminal point, say, Vancouver, anomalies in connection with it are complained of at interior points. That is to say, if a merchant at Calgary finds that the rate from Great Britain is lower than the rate from Montreal, he considers that he is being discriminated against. But in a particular case the railway rejoined that the ocean rate on bar iron from Europe to Vancouver is 35 cents per 100 pounds. The rail rate on this commodity from Vancouver to Calgary is 91 cents, giving a combination of \$1.26. At the same time the lake-and-rail rate (all-rail being higher) from Toronto or Montreal to Calgary is \$1.31. If, then, the railway met the rate combination on Vancouver where water competition existed, an anomaly would be created.

Such an anomaly may exist in the case of an interior point like Kamloops. Heavy crockery packed in straw, in basket crates, obtains a low ocean rate because, since it packs solidly, it is really paying ballast.

If the railway makes a compelled rate to Vancouver on this commodity, then the rate to Kamloops will be the rate to the Pacific terminal, plus the local rate back to Kamloops. To Kamloops, there being no water competition at that point, the rate would roughly be proportionate to distance. But if the rate to the coast, plus the local back, is less than the straight rate to Kamloops, the combination on Vancouver will naturally act as a maximum holding down the Kamloops rate. With greater efficiency of water competition at Vancouver, the effect of the compelled rate at the terminal will affect the rate situation still further east of Vancouver.

On a shipment of tea from Montreal to Vancouver complaint was made that, while in carloads the all-rail rate was \$1.40 and lake-and-rail \$1.33, there was a thru import rate of 98 cents from British ports to Vancouver.

14. *Attitude of railways.*—The position taken by the Canadian Pacific, in explanation of this, was that the rate all-water from London to Vancouver by the China-Mutual—the Blue Funnel Line—was 73 cents, while by way of the Tehuantepec Railway it was 76 cents. Therefore, in quoting an import rate of 98 cents the railway contended that taking into full consideration such advantages as it had over the all-water route in point of despatch, it could not charge more than it did and get any share of the import business.

15. *Influences on import rates.*—A merchant in London, Ontario, may complain that the rail rate he

pays on goods from Montreal is higher than the rail rate for the same distance when the goods move on an import rate. The import rates are governed by the Official Classification and the local rates by the Canadian Classification. Consequently, on account of differences in the ratings, comparisons can only be made in the higher classes.

	1	2	R.25	3	R.26	4	5	6		
Import	42	37	31½	31½	25½	23	19	16½		
	1	2	3	4	5	6	7	8	9	10
Local	54	47	41	34	27	25	20	21	..	18

The railways contend that the import rate is dependent upon the conditions of traffic by way of the various North American ports. The adoption of the Official Classification is an evidence of this. The rates thru, say, New York, are affected by the amount of tonnage offering in Europe for New York and the greater density of traffic in the eastern states. New York, it is urged, is more favorably situated from the standpoint of attracting ocean tonnage than is Montreal. The rate fixed by way of New York will then, it is contended, fix the maximum which the shipment entering by Montreal cannot exceed. On shipments to Ontario points, the access afforded by United States lines spreads into Canada the effect of the United States import rates.

Thru the import rate being thus fixed, the railways will further contend that, if on account of the lesser amount of ocean tonnage moving to Montreal, the

ocean rate to that point is higher than to New York, then the Canadian railway participating in the import traffic must either shrink its proportion of the inland rate or forego the business entirely. In other words, it is contended that it is not thru any desire to discriminate against the Canadian domestic movement that the lower import rate basis is given, but because it will not stand any higher rate.

REVIEW

What do you understand by distribution rates? What is another term for such rates?

What factors complicated the rate situation from Montreal?

What do you understand by a standard tariff?

What situation in Canada corresponds to the long-and-short haul difficulty in the United States? How was this situation settled?

What has been the effect of special export and import rates in the United States on Canadian rates?

CHAPTER XII

INTERCHANGING TRAFFIC AND OTHER SERVICES

1. *Transit arrangements.*—In the tariffs are to be found arrangements which permit the raw material to be worked up in whole or in part before the rail-journey is completed. The Board has recognized in the case of sugar beets and of pulp wood, for example, that the railway may take into consideration in fixing the rate basis inwards on crude material, that it carries out the finished outcome of this raw material. It may, therefore, adjust its rates on the basis of a continuous service instead of the basis of two distinct services.

The milling-in-transit privilege is probably the best known of these manufacturing-in-transit arrangements. With the expansion of the railway system of the United States in the early seventies, there came readjustments in flour milling. For example, a new milling industry began to develop in Wisconsin and Minnesota. Hitherto, the important flour mills had been located in the East and in the Middle West. With changes in agricultural conditions, the established mills had to look farther West for wheat. The new western mills were in a position to obtain their grain locally, in the first instance, by wagon haul. The railways competing for their business gave low

rates eastbound on the milled product. The rates were further held down by the proximity of these mills to the Lakes.

At the same time the established mills farther East were apparently faced by a cost which, as compared with the costs of the western mills, would be prohibitive. For it appeared as if the eastern mills would have to stand the rate of the relatively long haul on their wheat in and the full rate on the flour out. To meet this condition, the railways developed the milling-in-transit arrangement whereby the shipment of the wheat in and of the product out were treated as a continuous movement on one rate instead of two local movements on two local rates.

This transit arrangement, which is mutually advantageous, since it enables the miller to draw upon wider areas for his supplies and insures the railway the outward movement, is now widespread. It is taken advantage of in western Canada and extensive use is made of it in eastern Canada. Grain, flaxseed and grain products originating in the Northwest, destined to Fort William, Port Arthur and Westford, and shipped to millers on the direct line of transit, will be charged the current local grain rate in.

To take advantage of the transit arrangement, the milled product has to be shipped out in six months. If so shipped, it is charged the balance of the thru grain mileage-rate from the point of origin to final destination, plus one cent per 100 pounds for terminal services at the milling point.

A similar arrangement is made when the grain is shipped to elevators for cleaning or storage. In the adjustment of the rate, there is refunded to the shipper the difference between the local rate in and the thru proportional rate for the inbound haul.

It is not permissible to reship outwards one kind of grain or its product against an inward billing for another kind of grain. That is to say, wheat or its product may not be reshipped against inward billing for oats, or vice versa.

Under grain products are included barley, cleanings, breakfast foods or cereals (uncooked), bran, buckwheat, buckwheat flour, chopped feed, cornflour, cornmeal, flour (made from grain only), grits, groats, linseed meal, malt, middlings, millfeed, oathulls, oatmeal, oilcake, oilmeal, peas (whole or split), rolled oats, rolled wheat, rye flour and meal, sweepings and screenings, shorts and wheatmeal. Malting is covered by the transit arrangement on the same general conditions, subject to the further condition that the balance of the thru rate will apply on the product outward to the amount of only 80 per cent of the weight of the barley covered by the inward billing.

2. *Stop-over arrangements.*—A stop-over is allowed on rough lumber for dressing, re-sawing or sorting and reshipment. Here, while a similar rate arrangement is permitted, the stop-over is limited to thirty days. When re-sawing or dressing is performed, the outward weight must not exceed the following percentages of the weights shipped into stop-

off point: 95 per cent when re-sawn in the rough; 90 per cent when dressed only; 85 per cent when re-sawn and dressed.

3. *Tariffs recognize principle of consignments stopped in transit.*—In the tariffs will be found various recognitions of the principle of treating consignment as a thru movement, altho it may be stopped in transit for one purpose or another, there being some charge for such stop. The more important examples may be mentioned. Apples may be shipped to storage and inspection points for subsequent reshipment. Beans may be held for cleaning and reshipment. Coal and coke may be reshipped in the same car if there is no breaking of bulk. Provision may be made for completion of carloads of hogs, or for feeding in transit.

4. *Changing destination in transit.*—While the contract for carriage is in reality concerned with the movement between the points set out in the bill of lading, the railways arrange for changing destination. This is of advantage because when the commodity goes forward it may not be known what is the best market for it; or when it is in transit, information as to a better market than that to which it was originally consigned may be obtained. On payment of \$3 per car for each change of destination in transit, the railway will, on request, attempt to change the destination. In addition, the difference between the rate as paid and the rate to the ultimate destination has to be paid.

In the event of a car being hauled out of the direct line from the shipping point to its ultimate destination, a charge of one cent per ton per mile, with a minimum of twenty miles, will be made for such extra haul. But in no case must the total charges exceed the local rate to and from the point at which the change of destination is made, plus the charge for change of destination. The extra services and responsibilities which this change in transit places on the railway are: the sending of a telegram to the agent at the point where the change is to be made; the agent at that point must be on the lookout for the car, and this may require his going to the van of each passing freight train in order to examine the conductor's record; when the car is found it must be rebilled and the waybill must be checked; the amount of charges must be verified and the auditor of the department informed; the car must be cut out of the train and put to one side, thus necessitating switching, etc.; the car must be picked out and put on the new train; the railway company must assume the legal responsibility of deciding whether or not the party who asked that the destination of the car be changed owns the merchandise and has the right to deal with it.

5. *Concentration rates.*—A concentration or assembling arrangement is of advantage to shippers. A part carload of horses, cattle, hogs or sheep charged at carload rate and weight from original point of shipment to final destination may be stopped in transit, on the direct run, for completion of load at an addi-

tional charge of \$3 per car for each stop. In the case of poultry, the charge is \$5. In both of these cases, if there is an out-of-line haul, there is, in addition to the stop-off charge already mentioned, a charge of one cent per ton per mile, with a minimum of \$3.

Butter, cheese and eggs when shipped in less-than-carload quantities (in the case of cheese 500 pounds or over) to cold storage points, for cold storage, branding or inspection and reshipment, have a special rate basis in. Such commodities when exported are given the advantage of the export rate from the original shipping point to the port of export, plus 2 cents per 100 pounds for stop-over. In the case of cheese, this arrangement applies only if it is shipped into and out of the cold storage point in carloads.

6. *Special rate reductions.*—At times, the railways carry pedigreed stock at half rates. This is regarded by the railways as a matter of concession, not of right. The smaller roads when asked for such an arrangement, reply that their traffic will not warrant the reduction.

Seed grain is carried at reduced rates. This concession is not, however, a continuous one. It is published from season to season, as crop conditions seem to demand it.

With a view to facilitating settlement, the railways in the Northwest carry settlers' effects, in carloads, at one-half the ordinary sixth-class tariff rate which would apply under the classification. The Canadian Pacific restricts this concession to settlement on its

own lines. The Canadian Northern does not so limit the concession.

7. *Cartage service*.—Beginning about 1855, the Canadian railways performed cartage service. Until 1892, there was no charge by the railways for the service. In 1893, because of the increase of the cost of cartage, the railways added to their rates $1\frac{1}{4}$ cents a hundred pounds in the case of the first four classes of the classification, and to the fifth class 1 cent. In 1903, the charges were equalized by making the additional amount so collected $1\frac{1}{2}$ cents a hundred pounds for the five classes. In 1908, $\frac{1}{2}$ cent a hundred pounds was added. This made the charge to the public 2 cents a hundred pounds, with a minimum of 15 cents on smalls.

At the same time, the railways were paying the cartage companies that performed the service in Montreal, for example, $2\frac{1}{2}$ cents a hundred pounds. In 1912, application was made to the Board to permit the charge to the public as set out in the tariffs to be raised to 3 cents a hundred pounds, with a minimum of 20 cents on smalls. Evidence was submitted by the cartage companies as to the great increases in their cost of operation. Permission was given to the railways to collect $2\frac{1}{2}$ cents a hundred pounds from the public, the smalls charge remaining unchanged.

The cartage service has been performed in Eastern Canada by the Dominion Transport Company and the Shedden Company, the railways having made contracts with these companies. It was, of course, open

to the individual shipper to perform the cartage service to and from the railway sheds. In practice, however, it was found that in the bulk of the business, it was more expeditious, as well as more economical, to have it performed by the cartage companies. The latter have made and accepted deliveries of outbound and inbound package freight at different shed doors, thus aiding the railway to distribute freight within the sheds and to increase the speed of handling. Bills of lading are signed by the teamsters of the cartage companies.

The railways contended that the increased cartage charge which was allowed in 1912 did not sufficiently reimburse them for the payments they had to make to the cartage companies. Upon the reissuance of the class tariffs to western points brought about by the Board's decision in the Regina Rates Case, the rates in Western Canada were published exclusive of cartage, i.e., shippers and consignees were obliged to furnish their own cartage. At the same time, an arrangement was made by the railways whereby, in respect to the service performed by designated cartage companies, they undertook to bill forward for collection from the consignee, the cost of cartage on outbound business. The railways in adopting the discriminatory practice of limiting this concession to designated transfer companies at the various points, stated that it would be impossible to let all the isolated movements by private conveyance participate in

it, because of the additional bookkeeping expense it would entail. The consignees objected to the railway's billing forward the cartage charge. They said that if it is an expense properly attachable to the sale of the goods, let it be covered by the invoice. While it was a convenience, it was not in terms of the Railway Act a railway service.

8. *Cartage charge not under Board's jurisdiction.*—The subject of a cartage charge is not a matter which is subject to the jurisdiction of the Board. The question as to whether the consignees should or should not pay cartage is entirely a matter of contract between the consignors and consignees. In each case, the question as to whether the cartage charges should be paid by the consignor or consignee depends on the terms of the contract.

The railways proposed to cancel all cartage tariffs effective October 1, 1913, as they desired to discontinue contracts which they had made with the Cartage Companies. The railways urged that while they had, in the past, been absorbing part of the charge, the service was not a regular railway function, but one which had been given to relieve the general situation and to serve the public.

Negotiations took place which led to the service being continued on new rates and at the expense of the shippers. The Board held that the work of cartage was not a railway service or facility within the meaning of the Railway Act; that while the cartage rates are quoted in the tariffs filed with the Board, the

the Board has no jurisdiction over the Cartage Companies performing the service; and that the rates upon which they perform the service for the railways are dependent entirely upon contracts, over the terms of which the Board has no control. The situation was, that while the railway might, of its own volition, enter into an arrangement with cartage companies for the performance of the service on certain terms, the Board had no power under the Railway Act to order it to make arrangements as to these cartage services with bodies over which it had no control whatever.

REVIEW

What is a milling-in-transit rate? Why is it mutually advantageous to miller and railway?

Discuss concentration rates.

What other special rate reductions do the railways make?

What position do the railways take on the question of a carter's charge?

CHAPTER XIII

PASSENGER TRAFFIC

1. *Water and port competition in passenger traffic.*
—Passenger rates are not affected by competition of markets and only to a slight extent by competition of ports. While the development of facilities for foreign travel by way of a particular port may attract passenger traffic by rail from one route to another, the preference of the passenger counts for more than mere cheapness of route. While to the ton of freight the cheapness of the rate is the thing, in the case of the passenger rate conditions of personal comfort, scenic attractions of the route, and the like, may more than offset a lower rate afforded by a shorter mileage to a particular port.

Water competition and its concomitants which, in certain phases, connect themselves with competition of ports, are also much less important here. The competition of the Great Lakes attracts tourist traffic. But the business man who has to meet some business engagement seeks the more expeditious rail route. Low-grade bulky freight is attracted by water because the rate is more important than the time of transit. Within limits, the time of transit is more important to the business man than is the rate.

In freight business, ocean competition connects itself with port competition when a particular port may, by attracting a larger volume of tramp tonnage, afford a cheap, slow and perhaps roundabout route for freight. But here, again, on the ocean movement, time and directness of route are more important to the passenger.

2. *Distance an important factor.*—Distance affects passenger rates much more directly than it does freight business. Reference has been made to the extent to which circuitous routes may enter into the transportation of freight. But in the movement of passenger business between New York and New Orleans where the most roundabout route is 53 per cent longer than the most direct, normally passenger travel between these two points will seek, if not the shortest, at least the shorter routes. For if the longest route is taken, there will be such an addition in time to the journey that unless the rate is very much reduced the additional expenses of travel, meals, sleeper accommodation, etc., will more than take up the rate advantage, if any. Again, in the movement from the eastern states to San Francisco by a broken rail and water route by way of Vancouver as compared with a direct all-rail route, the former may, on account of the magnificent scenery of the Canadian Rockies, attract the tourist, but it is the latter which attracts the business man.

3. *Time element.*—In passenger travel, the time element is much more important than the rate element.

But this statement must be modified by the fact that if the time taken in transit is not too great, a slower and more circuitous route may, within rather narrow limits, compete with a more direct route.

This is recognized in the transportation field between Chicago and New York. The high-speed trains are excess-fare trains. Between Detroit and Buffalo, the Michigan Central has its high-speed excess-fare train, the "Detroiter." The Grand Trunk, because of its longer line between Chicago and New York, has a differential rate of \$16 first-class, as compared with the \$18 rate of the Michigan Central and other standard lines. The excess-fare trains are run on the principle of a premium for higher speed, the premium being repaid if the time is not made.

It is within the bounds of reason to say that normally the excess fare is not sufficiently high. The excess-fare train, on account of the limited number of cars it can haul and the superior luxury it affords its passengers, is more costly than the lower speed train. Possibly a railway may feel that it can in a way regard this difference as being properly chargeable to the advertising which such a service gives the railway. But the additional costs are not limited to the train movement alone. The high speed entails greater expenditures on track and equipment than would be necessary with more moderate speed. To the extent that high speed service does not meet its proper share of this expense, the slower trains must pay more than their proper share. The superior facility of the ex-

cess-fare train should be compensated by an excess fare commensurate with the increased cost, not merely by a nominal penalty.

4. *Expensive stations.*—In the development of passenger business, more expensive passenger stations are called for in the larger cities. The expense of these may be measured in millions of dollars. But when measured in terms of passenger traffic, the terminal expense per unit is relatively small. The expense of the passenger terminal may be considered as roughly proportional to the business in and out of the point it serves. It is not necessarily increased in expense by the thru movement. In freight business, the constant expansion of terminals, while in part attributable to local conditions, is also attributable to general increase in the business of the country.

The congestion of freight facilities, which Montreal at times faces, is not due alone to the business local to Montreal; the export business is also an important factor. Passenger business, for example, at Winnipeg, while affected by the movement of settlers thru, is roughly proportioned to the business local to Winnipeg. In older sections which have been longer settled, this holds in greater degree. But when the Canadian Pacific acquired land at \$1,000 per acre for terminal purposes, at Transcona, its action was due to the general expansion of the freight business of the Northwest. Since 1904, the Canadian Pacific has rebuilt and remodeled every one of its freight terminals from Fort William to Vancouver. The freight busi-

ness requires a large amount of service in terminals, all of which takes time, space and expense. The passenger loads and unloads himself. In purchasing his ticket, he classifies himself in point of service.

While in freight business, the terminal expenses tend to become of increasing importance in passenger business it is the costs of haulage, the line costs, which are more important.

5. *Other factors.*—While the ton-mile rate, because of conditions already referred to, tends to decrease as the distance increases, the passenger costs are much more constant. Consequently, the distance factor is much more important in passenger business. Again, disturbing conditions of competition such as are present in freight business are much less in evidence here.

The passenger fare for a journey is a multiple of rate and distance. That is to say, the principle of equal mileage rates without a tapering of the rate as the distance increases may be more readily applied here. The actual rate applied may be modified by return trip rates, commutation rates, excursion trip rates, etc.; so it does not happen that the rate charged is an exact multiple of the standard rate. It is computed that in Canada not more than 20 per cent of the passenger travel is carried on one-way first-class tickets based on the standard rate per mile.

On the long-haul business, modifications of the distance basis and entrance of the grouping principle in a modified form may be found. From Montreal to Vancouver, the first-class limited fare of the Canadian

Pacific is \$72.50, while from Ottawa, a distance shorter by 115 miles, the rate is only \$1 less. On round-trip tourist tickets, grouping or blanketing may be found to a greater extent. Thus the nine months' round-trip tourist-rate from Ottawa to Vancouver is \$132.10. This rate applies from Finch, Winchester, Prescott and Kingston.

In the freight business, the movement is a one-way one. That is to say, the transportation is concerned only with the movement of the commodity to the market. The cars must be taken back either empty or filled with some other commodity. But the passenger business is better balanced. A man goes from his home town to a near-by town on business; in a short time, he returns. In the absence of alternative routes, the passenger business which goes, returns. Of course this is subject to the exception which arises in the case of settlers coming into the Northwest. But this is only a momentary disturbance of the balance. Once their economic condition improves, they also begin journeys away from home with their consequent return. While there cannot, in the nature of things, be a perfect balance of mileage at a given time, there is proportionately less empty mileage due to a lack of return business.

While freight business may, to a considerable extent, be stimulated by reduced rates, this does not hold true to the same extent in passenger business. The energetic advertising of the passenger department does, indeed, stimulate a demand for tourist, trans-

continental, colonization, round-the-world traveling. But the extent to which this can be developed depends upon the income of the individual. There are not only the incidental expenses of train travel, but the hotel and other expenses along the way are also large. The extent to which, then, there is a response to such methods of stimulating travel depends on the opinion of the individual as to some business gain to be obtained, or upon his surplus income. Concessions in rate are apt to have the most noticeable effects in connection with commutation business on a relatively short-haul movement. The commutation rate permits the business man to live some distance out of the city. His family thus becomes dependent upon train travel. The excursion rate stimulates holiday travel. But, here again the matter of surplus income is a determining factor.

6. *Passenger business in practice.*—Comparison between freight and passenger business is natural because they are the two main sources of railway income. While they are not, because of inherent differences, exactly comparable, they are of interest when considered jointly, because they are complementary. A freight traffic man may look askance at the advertising expenses of the passenger department. The passenger man will respond that while it may be difficult to point out the exact return from such advertising, it not only creates passenger traffic but also aids in attracting freight business. It may be too broad a generalization, altho it is sometimes so stated, that the

line on which a man travels is the line he will route his freight over. Whether or not he does so in practice depends on the matter of freight facilities. But if a man is favorably impressed by the passenger service he receives, it has some effect on his shipping instructions. Mr. W. P. Hinton, Traffic Manager of the Grand Trunk Pacific, who has had a diversified experience both in freight and passenger business, put the matter, from the passenger man's standpoint, very aptly when he said:

Under the Railway Act of Canada, transportation companies are permitted to give special fares and concessions to land settlers, agricultural exhibition managers, exhibition and commercial travelers. The ultimate results are reaped by the freight department, owing to the settlement of the land, the improvement of crops, and the additional sale and distribution of merchandise and supplies.

7. *Passenger and freight receipts compared.*—References which have already been made to certain phases of the freight business show how much more important freight business is in terms of railway receipts than is passenger business. In the newly developed and more sparsely settled sections, a preponderance of freight business is always found. While in England every \$100 of revenue is divided between passenger and freight business in the ratio of \$47 to \$53, in Canada the ratio is \$31 to \$69. In the United States, a somewhat similar ratio is to be found, altho in the more densely settled eastern states the ratio is \$44 to \$56. Progressive increase in density of population,

other things being equal, may be expected to affect passenger business.

While the receipts, and work done in freight business may be expressed in ton-mile earnings, the passenger mile, which is also a work-distance unit, is used to measure passenger earnings. While the ton mile is made up of two exact quantities, passenger mileage is made up of one inexact and one exact quantitative index.

In Canada, in the period 1907-1915, the number of passengers carried increased by 44 per cent, while the receipts increased by 30 per cent.

The earnings per unit in passenger and in freight business in Canada for a period of years are of interest:

	1910	1911	1912	1913	1914	1915
	¢	¢	¢	¢	¢	¢
Average receipts per passenger per mile	1.886	1.944	1.943	1.973	2.007	2.021
Average receipts per ton per mile .....	.739	.777	.757	.758	.742	.751

8. *Density of traffic.*—In freight business, an index of increasing business is freight density, that is, tons hauled one mile per mile of line. In passenger business, a similarly constructed index, viz., the number of passengers carried one mile per mile of line, may be used. For the period 1910 to 1915 the figures for Canada are as follows:

	1910	1911	1912	1913	1914	1915
Passenger density..	99,742	102,597	108,888	111,353	100,309	69,802
Freight density....	635,321	631,829	731,776	716,820	716,339	496,355

The conditions as presented by these figures for

1915 are abnormal. The addition in that year of 15 per cent to the mileage of the previous year added new mileage which, for the time being, was unproductive, and in addition there were the disturbed conditions due to the war. Notwithstanding the increase of mileage, there was a decrease in passengers handled. Under normal conditions, the situation has been, in a general way, that freight density has been increasing about one-third more rapidly than mileage while passenger density has been increasing eight-tenths as rapidly.

9. *Effect of economic depression on passenger business.*—In passenger business, one bad year by its curtailment of income affects business in succeeding years. While only 500 miles of railway were constructed in 1908, the freight business of that year showed a sharp increase over that of 1907. It is true that it took until 1910 to get back to the normal situation. Similarly in 1915 there was a sharp decrease in the average journey and in the average number of persons per train as compared with 1914. But in the case of passenger business, the curtailment was felt most after the depression year.

Passenger travel in Canada tends roughly to increase in the same ratio as population. It is more readily affected than freight by economic disturbances. Economic depression may, thru the necessity of the producer, stimulate freight traffic. People do not have to travel; they have to be clothed, fed, housed and warmed. The creation of passenger

travel depends on human volition. The creation of freight traffic thru the production, for example, of the great agricultural staples depends on weather and climatic conditions. In passenger business, one bad year, by its curtailment of income, affects business in succeeding years. Measured in trips per capita, i.e., frequency of travel, passenger business, which fell after the depression in the year 1908, took until 1912 to recover. In the same period there was a steady increase of freight traffic per capita. On the other hand, as between 1914 and 1915, the decrease is much sharper in the case of freight traffic than in the case of passenger traffic.

10. *Measurement of passenger traffic.*—A measure of passenger business is obtained either by computing the frequency of travel as measured in trips per capita, or by computing the average mileage traveled per capita. The freight traffic may be measured in terms of tonnage per capita.¹

Year	Population	Trips per capita	Miles per capita	Tons per capita
1907.....	6,471,427	4.9	313.6	9.8
1908.....	6,654,779	5.1	311.1	9.4
1909.....	6,838,302	4.8	297.6	9.7
1910.....	7,021,825	5.1	351.9	10.5
1911.....	7,204,838	5.1	357	11.0
1912.....	7,388,361	5.5	390.5	12.1
1913.....	7,571,713	6.2	440.2	14.1
1914.....	7,755,065	6.0	396	14.3
1915.....	7,979,417	5.8	333.2	10.9

¹ The statistics of the department of Railways and Canals furnish the total number of passengers and the average passenger haul, as well as

11. *Differences in freight and passenger business.*—

A striking difference exists between freight and passenger business, both in respect to the load and the haul.

	1910	1911	1912	1913	1914	1915
Average freight haul in miles.....	211	200	218	216	217	202
Average tons per train.....	311	305	325	342	353	344
Average passenger haul in miles....	69	70	71	71	66	54
Average passengers in train.....	59	60	62	62	59	50

The average freight haul has decreased by five per cent, while the average passenger haul has decreased by twenty per cent.

While railways have been able in the freight business to haul more cars behind an engine and get more into the cars, the conditions are different in passenger business. For 1915, the freight receipts were 221 per cent of the passenger receipts, but the freight train mileage was only 104 per cent of the passenger train mileage. The earnings per freight train mile were \$2.57, while per passenger train mile they were \$1.01.

12. *Capacity of cars.*—The economies of heavier loading are not available in the passenger business. Altho the Great Northern once attempted in passenger business the principle of maximum loading which it used in its freight business, it was found that the principle could not be applied. With the frequent service which highly developed passenger busi-

the total freight tonnage. To get the yearly population, it is assumed that the rate of increase in the intercensal period 1901-1911, was spread out evenly in each year, and that this rate has since continued. The limitations of this method are recognized.

ness demands, the average loading per train is low. The standard first-class cars of the Canadian Pacific seat 72. The 50 passengers accommodated by the average train could be handled in one car, with space to spare. While the traveler may at times be subjected to overcrowding, on the average four-fifths of the seating capacity of a train is unoccupied.

Travel in Pullman and sleeping cars reduces the average to some extent, the ordinary maximum carrying capacity of a sleeping car being twenty-seven. However, it was testified in the Pullman Rates investigation that, on the Canadian Pacific, one year with another, there were not on the average more than ten berths occupied.

While sleeping-car movement and parlor-car movement do hold down the average, the effect is not as great as might be anticipated. In 1909, only 2.91 per cent of the total number of passengers on the Canadian Northern were carried in sleepers. For the same year, the Grand Trunk carried 3.25 per cent of its passengers in sleeping cars and 1.15 per cent in parlor cars. On the Canadian Pacific, the figures were 5.9 per cent for sleeping-car business and 1.2 per cent for parlor-car business. To carry seven per cent of the total number of passengers in Pullmans and parlor cars meant that the mileage of these cars was twenty per cent of the total passenger-car mileage. This is due in part to such equipment being used on longer hauls and in part to the lesser carrying capacity of each car.

13. "*Dead*" weight.—The lesser average loading in passenger car business means an increase in tare. In passenger business, competition in service has led to an increasing weight of car. This is especially noticeable in sleeping-car traffic. West of Winnipeg, to and from Vancouver, there is a solid Pullman movement just as there is between Chicago and the Pacific coast of the United States. This has been characterized by the carriage of additional weight, observation cars, buffet cars, etc. The competition has been one in luxury and service, not in rate. The "Overland Limited," which has an excess fare of \$10 on its run between Chicago and San Francisco, has in addition to observation car and club car the following services: barber and baths, valet, stenographer, ladies' maid, telephone, electric ventilation, telegraphic news service, stock and market reports. It may be argued that a lesser competition in point of luxury would have been a better business policy.

14. *Increase in weight and cost of passenger equipment.*—The weight and cost of passenger cars has increased. The standard passenger engine, for example, which, in 1906, weighed about 145 tons had by 1910 increased to about 175 tons, at which figure it stands today.

A thru train on the Grand Trunk between Montreal and Toronto may be taken for comparative purposes. The train is composed as follows: engine, mail, baggage and express, one combination, two first-class, one diner, one parlor, one sleeper and one

observation car. The following summary compares the weight and cost:

Year	Weight of train Lbs.	Cost of train \$
1906	1,144,000	108,173
1911	1,383,899	128,801
1916	1,577,000	175,379

The weight of the train has increased 38 per cent, while the cost has increased 62 per cent.

A similar comparison of a Canadian Pacific train in transcontinental service may be made. The equipment of 1911 and 1916 differs from that of 1911 by the addition of a compartment observation car.

Year	1911 Weight of train Lbs.	1916 Cost of train \$
1906	1,343,800	128,177
1911	1,557,300	161,295
1916	1,994,500	242,694

The weight of the train has increased 48 per cent, while the cost has increased 89 per cent.

Taking the figures of 1906 as 100, the following comparisons of weight and costs are available:

Car	1911		1916	
	Weight	Cost	Weight	Cost
Colonist	155	195	182	293
First	111	...	139	136
Tourist	163	206	168	281
Diner	105	119	109	125
Sleeper	112	...	123	139

15. *Relation between weight of vehicle and returns on cost.*—The weight of the vehicle is an index of the

work to be done in earning a return upon the cost. The large amount of dead weight which has to be hauled per passenger is noteworthy. The returns for 1915 show the average number of cars, in trains of the passenger service as 3.6 and the average number of passengers per train as 50. How the cars were distributed according to class does not appear. Assuming that all were first-class, the result would be that these cars hauled only 19 per cent of their passenger capacity. The average dead weight hauled per passenger traveling would be 4.9 tons, while the cost of the vehicle per passenger was \$1,080.

16. *Weight and cost measured in capacity.*—The constant tendency to increase weight and cost may be measured in terms of the capacity of Canadian Pacific passenger rolling stock. The figures are based on physical capacity, not normal capacity, the latter being much less. Subject to this caution, the comparisons are:

Type of car	1906		1911		1916	
	Car w't per pass.	Car cost per pass.	Car w't per pass.	Car cost per pass.	Car wt. per pass.	Car cost per pass.
	lbs.	\$	lbs.	\$	lbs.	\$
Colonist	2303	160	2750	250	3277	383
First	1385	152	1388	152	1916	208
Tourist	2582	225	4286	465	4357	635
Sleeper	4073	555	4592	555	5037	774
Compartment- Observation }	....	...	7111	1143	7111	1201

17. *Occupancy of sleeping cars.*—In Germany, calculating $13\frac{1}{3}$ passengers as weighing a ton, it has been computed that 93.75 per cent of the weight hauled is dead weight. Of course, passenger fares are not calculated on weight; but the computation is of some

value as indicating where some of the cost of passenger business is to be found. While sleeping cars are supplied with both upper and lower berths, normally, the upper berths are in use only about one-fifth of the time. In the summer months, all the accommodation in a sleeping car may be taken up. At other seasons, there is often much empty space. Calculations made by the Canadian Pacific for certain winter months in 1910, showed for January of that year, between Montreal and Toronto, which is a heavy passenger run, 88 per cent of the lowers and 29 per cent of the uppers occupied westbound; while eastbound the percentages were 86 per cent and 27 per cent respectively. For the month of March, between Toronto and Winnipeg, the percentages of occupancy were respectively 20 per cent and 14 per cent. In the same month, between Montreal and Vancouver, the occupancy westbound was 70 per cent and 34 per cent, while eastbound it was 59 per cent and 14 per cent.

18. *Passenger hauls kept down by suburban traffic.*—The average passenger haul is kept down by the amount of suburban traffic, while in freight business the average haul has tended to increase because of the long haul of staple products. At the same time the suburban traffic, which is normally handled on commutation rates based on assured frequency of travel, has in recent years been subjected to competition from new methods of conveyance.

19. *Commutation business as part of railway earn-*

ings.—In establishing commutation rates the volume of movement is important. Canadian railways do not differentiate commutation business in their reports. The Boston and Maine differentiates its monthly ticket business in its reports. For the year ending June 30, 1916, the railway earned .653 cents per passenger mile from commutation business as against 2.016 cents on local business and 2.248 on interline. That is to say the commutation business earned per passenger per mile only 32 per cent of the local passenger mile earning. The commutation business, however, represented 11 per cent of the total number of passengers carried. The commutation business affords a chance to apply the wholesale principle which is not available in other parts of the passenger business. The traffic moves in quantity at definite times and consequently the needs in point of rolling stock can be more readily forecasted.

20. *Commutation business subject to competition.*
—Commutation business is, however, subject to other phases of competition. The increase in electric traction with the attractions of the frequent stop service thereby, affording a service which would be uneconomical in the case of steam power, has to be reckoned with. Then again, there is the seasonal competition of automobiles. The Chatham, Wallaceburg and Lake Erie, an electric line, finds that on the run into Chatham, the competition of automobiles is important on fine days—the electric cars get a greater bulk of passenger traffic in bad weather.

21. *Automobiles affect passenger revenue.*—In the eastern states, the increasing use of automobiles affects railway passenger revenue. During the past three years, the number of automobiles in Massachusetts, New Hampshire, Maine, Vermont and New York has increased 94 per cent. In Massachusetts, there is one motor vehicle for every 34 persons; in New Hampshire, one for every 30; in Maine, one for every 39; in Vermont, one for every 32; and, in New York, one for every 39. For Ontario, there was in 1915, one for every 46; and, it is estimated that during 1916, there will be an increase of one-fifth in the number of motor-driven vehicles. A traffic census made by the Public Highways Department of Ontario, in 1915, at points adjacent to twenty-one cities covered approximately 297,000 vehicles moving in a given period. An analysis of the returns shows that 30 per cent of these vehicles were motor-driven. While some part of the motor traffic is undoubtedly new traffic created by the new vehicle, some portion of it is short distance traffic that would otherwise have moved by rail.

22. *Increase in average journey.*—While electric cars and motors undoubtedly have an effect on short distance steam railway traffic, the extent to which they are effective, tho it can be indicated, cannot be exactly measured. One index is the average journey. With increasing density of population, should come a considerable increase in short distance traffic, thus bringing down the average. The Grand Trunk, run-

ning thru the more densely settled section of Canada, where the competition spoken of is keener, may be taken as a measure. Here it will be found, as indicated below, that with the exception of 1915, the general tendency is upward:

1908	1909	1910	1911	1912	1913	1914	1915
49	44	48	49	49	51	52	49

23. *General aspects of freight and passenger business.*—In general, the difference between freight and passenger business is much the same as the difference between carload and less-than-carload business. It is possible to handle freight in a wholesale way. Passenger business has, except in the case of excursion and similar traffic, to be handled in a retail way.

REVIEW

In what respects do freight rates and passenger rates differ?

What is the effect on passenger rates (a) of distance, (b) of time, (c) of stations?

Why is it easier to apply the theory of equal mileage to passenger rates than to freight rates?

What are the important elements in rate-making for long-haul business?

Do you believe that the passenger department of a railroad assists the freight department in gaining business?

How does an economic depression affect the passenger business?

Why is dead weight greater in passenger than in freight business?

Discuss the commutation business of the railways, and the influences affecting it.

CHAPTER XIV

PASSENGER RATES

1. *Passenger rates and the Railway Act of Canada.*

—Passenger tariffs are classified as standard and special. Standard passenger tariffs may express the mileage they cover in the same way as standard freight tariffs do. Special tariffs state the passenger tolls to be charged when such tolls are lower than the standard. The requirements as to the approval of standard passenger tariffs are the same as in the case of standard freight tariffs. The requirements in regard to the filing and coming into force of special passenger tariffs are the same as in the case of special freight tariffs, except that the public notice is limited to three days.

The Board is also given a wide discretion based on “the exigencies of competition or otherwise” to determine, notwithstanding the provisions of the statute, the time within which publication of any special tariff is to be made and the manner in which it is to appear.

The railways may grant free or reduced rates to the Dominion, to any provincial or municipal government, to fairs and exhibitors thereat, and to charitable societies and the necessary agencies of such institutions in connection with the carriage of destitute or homeless persons.

In defining the services just set out, the word "traffic" is used in the Railway Act. This covers both passenger and freight business.

Railways may issue mileage, excursion or commutation rates, and carry at reduced rates immigrants or settlers and their effects, as well as a member of any organized association of commercial travelers with his baggage. They may carry at free or reduced rates their own officers and employes, or their families, former employes of any railway, members of the provincial legislatures or of the press, members of the Interstate Commerce Commission of the United States, their officers and staff, with baggage and equipment. The railways may also carry free or at reduced rates such additional persons as the Board may approve or permit. Exchange of free transportation between the principal officers of railways is permitted in respect of the carriage of their officers and employes and their families, or of their goods and effects.

The statute also provides for the free transportation as a matter of right of members of the Senate and House of Commons, the members of the Board and such officers and staff of the Board as it may determine.

2. *Standard rates in effect.*—In 1907, the Board issued an order requiring the Canadian Pacific and the Grand Trunk to reduce their standard rates east of the Calgary and Edmonton Railway to 3 cents a mile. At the same time, the other railways were cir-

cularized to see whether their condition would stand the reduction. Subsequently, the Canadian Northern reduced its rates to the 3 cent basis. The rates west of the Calgary and Edmonton line remained at 4 cents.

Before the order was issued, there were various standards on the different railways. On the Alberta Railway and Irrigation Company, the standard was 5 cents. On the Algoma Central and on the Atlantic and Lake Superior, it was 4 cents. On the Grand Trunk (with the exception of the line from St. Lambert Junction to Rouses' Point, a distance of 44 miles, on which the rate was 4 cents) the standard was $3\frac{1}{3}$ cents. On the Canadian Pacific in Manitoba, the rate was 3 cents; while in Saskatchewan and Alberta it was $3\frac{1}{2}$ cents. A similar condition existed on the Canadian Northern lines in the West. On various sections of its lines east of the Great Lakes, the Canadian Pacific had rates of 3, $3\frac{1}{3}$, and $3\frac{1}{2}$ cents.

The general standard rate in British Columbia is 4 cents. Prior to 1901, it was 5 cents. The matter of the reduction of the 4 cent standard was one of the questions at issue in the Western Rates Case. The Board then found that the operating expenses per mile of line on the British Columbia division were 22 per cent higher than the average for the entire Canadian Pacific per mile of line, and upwards of 30 per cent higher than the average on the Prairie divisions. The operating expenses per train mile were found to be 54 per cent higher on the British Colum-

bia division than for the entire line, and 47 per cent higher than on the Prairie divisions. It was found also that the traffic afforded by the boat lines on the British Columbia Lakes afforded but small return. The Board held that it was not justified in reducing the standard to 3 cents as asked.

The British Columbia Eastern Railway has a rate of 6 cents. In British Columbia and the Yukon, the White Pass and Yukon Route between the Alaskan boundary and White Horse has, under exceptional circumstances, a rate of 18 cents per mile. The Klondike Mines, a short railway in the Yukon, has a rate of from 15 cents to 20 cents per mile. East of the Calgary and Edmonton Line the following exceptions from the 3-cent standard are to be found: 4 cents, Algoma Central, Algoma Eastern, Quebec Oriental, Atlantic, Quebec and Western; $3\frac{1}{2}$ cents, Pas Division of the Canadian Northern; $3\frac{1}{3}$ cents, Temiscouata, New Brunswick and Prince Edward Island, Dominion Atlantic. These exceptions have a mileage of 1,010 miles.

3. *Standard rates on government railways.*—The standard rates on the Canadian government railways are, in general, on a 3-cent basis, tapering somewhat on the longer hauls. On Section 1—the Prince Edward Island Railway Division—the rate is 3 cents a mile up to 200 miles, which covers the local hauls. In the case of travel between points on this division and other points on the system, the rate tapers until on hauls of 801 miles and over it is 2.2. On

Section 2—the Transcontinental Railway Division from Moncton to Diamond Junction—the rate up to 225 miles is 3 cents; above that it tapers until on a 500-mile haul there is a rate of 2.6. On Section 3—Quebec City to Winnipeg—the rate is 3 cents. Section 4—the International Railway of New Brunswick—has a rate of $3\frac{1}{3}$ cents. Section 5—the St. Johns and Quebec Railway Division—has a rate of 3 cents.

4. *Different kinds of passenger tickets.*—The different kinds of tickets in use on the Canadian Pacific may be taken as typical.

Mileage tickets in books of coupons covering 1,000 miles are issued east of Port Arthur. To be used on a train the coupons must first be exchanged for regular transportation. A ticket will not be honored if lost. On a first-class one-way ticket over more than one line, the company acts as agent and assumes no responsibility beyond its own lines. No stop-over is permitted, unless especially provided for. An immigrant ticket is good only for five days from date of issue and for continuous passage. No stop-over is allowed. Conductors' tickets are issued on train at a charge of 10 cents over regular fare; this 10 cents being redeemable. Arrangements are also made to sell regular transportation on the train in the case of passengers getting on at flag, or non-agency, stations. The second-class ticket has the same general limitations as the first-class. Commutation tickets are issued in: 10-trip tickets, good for continuous passage only, with no stop-over; scholars' 46-trip tickets, good

only for continuous trip with no stop-over, not good after date of expiration even if a portion is unused, and if lost, a duplicate will not be issued; 55-trip tickets with same conditions. In connection with commutation tickets, marketing stamps are issued. These may be used by suburban holders of 55-trip tickets. They provide for free transportation of 25 pounds of marketing in baggage car on one day. Marketing is defined as being perishable table food supplies. The tickets used between Nelson and Kootenay Landing, on the boat, have in addition to the usual conditions on first-class tickets, the condition that if the vessel's legal carrying capacity is all taken when the ticket is presented, the company's liability is limited to the redemption of the unused portion of the ticket.

In the case of excursion tickets over two or more lines, such as the nine months' round trip to Pacific coast points, in connection with which a series of options as to routes is permitted, provision is made for identification of the passenger. There is also a provision that the return portion of the ticket will not be good for passage unless validated by the agent designated for this purpose.

Traveling on freight trains is permitted in cases of emergency and on special permission from the Superintendent of the Division, or any higher official. A release from liability in excess of \$25 in case of accident has to be given. First-class fare is charged.

5. *Provisions for unused tickets.*—On all the

tickets issued there is the general condition that they are not transferable. The contract is a personal one, between the railway and the passenger. The sale of an unused portion of a ticket is in Canada, under R. S. C., 1886, Chap. 110, s. s. 7 and 8, a criminal offence. The railways make provision whereby a wholly unused ticket will be refunded when presented within sixty days after date of expiration of ticket at the ticket office where sold. Unused portions of round-trip tickets will be refunded at the amount paid for the ticket, less the one-way fare. When wholly unused or unused return portions of round-trip tickets are presented for redemption, more than sixty days after the date of expiration, the matter of redemption has to be taken up with the general passenger agent.

6. *Rules for baggage.*—The baggage rules provide that 150 pounds of baggage, not exceeding \$100 in value, will be checked without charge for each adult passenger, and 75 pounds, not exceeding \$50 value, for each child traveling on a half ticket.

7. *Baggage defined.*—What is covered by baggage has been the subject of judicial construction; and indication has, for example, been given that personal baggage is limited to clothing and such articles as a traveler usually carries with him for his personal convenience. Disney, in "The Law of Carriage by Railway," defines baggage, in a summary way, as including what a passenger takes with him for his personal

use and convenience, according to the habits and class of life to which he belongs.

8. *Railway's liability for baggage.*—The liability of the railway in respect to the carriage of baggage is limited to a liability during the time of carriage and a reasonable time thereafter for delivery. The transportation of a passenger's baggage is an incident of the passenger's journey, and he should call for it a reasonable time after the journey ends. After such reasonable time, the Company's liability as insurer ceases and becomes that of warehouseman or bailee. Whether the Company's liability will be that of warehouseman will depend on whether it is entitled to charge storage or not. The regulation in this respect, as revised by the Board, is "After the expiration of twenty-four hours from the receipt of such baggage or articles in storage, the carrier shall be liable as a warehouseman only."

9. *Storage charges.*—When baggage is uncalled for after a certain time, storage charges are imposed. The railways state that the charge is not imposed with a view to making a profit, but as a deterrent. Their facilities are too expensive to justify their engaging for profit in the warehousing of baggage at the rates charged. At first, storage charges were on inbound baggage only; but it was found that outbound baggage was at times left for a considerable period; so storage charges were made to apply in both directions.

After the lapse of twenty-four hours free time,

storage is charged on baggage remaining at stations or wharves. Twenty-five cents is charged for the second day of twenty-four hours or portion thereof, including the preceding day. For each additional day, or portion thereof, including preceding days, there is an added charge of 10 cents until with the ninth day a charge of 95 cents is reached. For the tenth day and to the end of the month the charge is \$1. For subsequent periods, the maximum charge is \$1 per month.

10. *Initial carrier liable for baggage.*—In the revision of the baggage rules in 1915, the provision was added that where baggage moves over two or more lines, subject to the jurisdiction of the Board, the checking carrier is liable for the loss or damage due to a connecting carrier and shall have its recourse against each connecting carrier. This enables the passenger to deal with the initial checking carrier, instead of trying to ascertain who is responsible and then to follow the matter up.

11. *Baggage handled in Toronto.*—A special study made in connection with the plans of the new Union Station in Toronto showed that in the year 1912 there were on the average 4,400 pieces of baggage handled per day. One-quarter of this total was made up of hand baggage. A check of traffic on June 24, 1913, showed approximately one in every eight passengers had baggage checked. In the period 1900–1912, the pieces of baggage handled at Toronto increased 93 per cent.

12. *Parcels checked at Toronto.*—Parcel checking is one feature of the activity of the modern passenger station. At Toronto, there are 1,000 parcels checked per day.

13. *Baggage carried by railways.*—The returns do not show what amount of baggage is carried. If it is assumed that the average, as shown at Toronto, applies generally, then taking heavy baggage as averaging 100 pounds per piece, the railways carried in 1915 at least 240,000 tons of baggage. In various countries, a considerable revenue is obtained from baggage carried. The Swiss railways, for example, received \$5.13 per ton in 1914, from the carriage of travelers' luggage.

14. *Sleeping-car service.*—The sleeping-car service, which is now regarded as one of the necessary comforts of long-distance traveling, has been connected with Canadian railway travel since Confederation. The first Pullman car, the "President," was put into operation on the Great Western Railway in 1867. It was a combination sleeper and kitchen with portable tables. When the Pullman Company operates the service under contract, as on the Grand Trunk, the arrangement is that if less than a sum set out in the contract is earned per car per annum, the railway pays mileage. When this guaranteed sum is reached no mileage has to be paid. When a certain fixed sum is exceeded then the railway receives one-half of the excess. In the case of the Canadian Pacific, the Great Northern, the Canadian Northern,

and the Grand Trunk Pacific, the sleeping cars are operated by the railways themselves.

The rate basis of sleeping-car tariffs now in force is, east of Calgary, 6 mills per mile, with 20 per cent off on upper berths. West of Calgary the basis is 8 mills per mile, with the same reduction for upper berths. The parlor car rates are based on a charge of 5 mills per mile east of Calgary, and two-thirds per cent per mile west thereof.

15. *Classified passenger rates.*—While the matter of ability to pay is recognized in passenger rates, it is not organized in the same way as in freight business. Passenger rates average to a greater degree, than do freight rates, differing conditions of travel and of passengers.

The railway between Montreal and Lachine, which was opened in 1847, had the English style of compartment cars—the first, second and third-class accommodation being supplied on the one car. The charter of the Grand Trunk, under the influence of the movement which culminated in England in the provision for “Parliamentary” trains, provided for a third-class service between Toronto and Montreal at the rate of one penny per mile. The Privy Council has stated that this provision is still binding.

But while in Canada it was apparently assumed that passenger traffic would be divided into three classes, such a development has not taken place.

The Railway Act does not provide for second-class

fares. In eastern Canada, second-class fares grew up as a measure of segregation in connection with the carriage along the Lakes and the St. Lawrence of the lumber jacks, Indians, and others working as day laborers in the lumber industry. These rates were also used in connection with colonization. While they were used on the original Grand Trunk line and were later met by the Canadian Pacific in competition, they are not in general use in eastern Canada.

Second-class rates from eastern to western Canada were also put in to aid colonization and settlement. It is contended by the railways that the need for the second-class rates for this purpose has passed, as there is not any considerable movement of colonists from eastern to western Canada.* Most of the movement, it is stated, is of immigrants from either Europe or the United States who move on special fares, in many cases lower than second-class. Second-class rates are in force from practically all points in eastern to all points in western Canada. As an example of the relation of the rates, the first-class unlimited ticket from Ottawa to Calgary is \$63.70; first-class limited, \$55.70, while the second-class is \$41.70. In general, from points intermediate to Winnipeg and Vancouver, there are no second-class rates east of Winnipeg. From Vancouver to Winnipeg, the Canadian lines made a blanket second-class rate of \$40 to meet American competition. That is to say, from any intermediate point to Winnipeg this rate will apply

until the first-class rate is lower, the latter then applying. In general, the railways take the position that second-class rates are an unnecessary survival.

So far as Canada and the United States are concerned, it may be said that in reality the Pullman is the first-class and the standard first-class car the second-class.

16. *Passenger classes in Europe.*—In Europe, the practice of having three classes and even four prevails. The following tabular summary as to the percentage of passengers by classes in various countries is of interest:

	1	2	3	4	Military
Austria	0.4	5.8	92.7	....	1.1
France	4.0	19.0	77.0	....	..
Germany	0.1	7.4	42.3	49.0	1.2
India	0.2	0.7	2.7	89.8	..
Japan	0.3	4.4	95.3	....	..
United Kingdom	5.7	3.9	90.4	....	..

In the case of passenger business, as in the case of freight business, it is practically impossible to make any comparisons of value between conditions abroad and conditions on this continent. There is lack of a common denominator.

17. *Class rates in foreign countries.*—In the matter of rates, the low averages of various foreign countries are due to a type of travel, third-class or even fourth-class, which is not found on this continent. Examination of the first-class rates will indicate that they average higher than the corresponding rate on this continent. Average receipts per passenger, per mile, are set out in the following table with

also a class differentiation for France and Germany:

	Average fare in cents					
	All classes	1	2	3	4	Military
Austria	1.079	....	....	....	....	....
France	1.068	2.125	1.323	.891	....	....
Germany .....	.908	2.896	1.570	.981	.709	.387
India .....	.412	....	....	....	....	....
Japan .....	.683	....	....	....	....	....
United Kingdom	1.51	....	....	....	....	....
Canada	2.021	....	....	....	....	....
United States.....	2.023	....	....	....	....	....

18. *Average hauls in foreign countries.*—Where the average haul is short, it is apparent that a lower standard of comfort or convenience is required in connection with the accommodation supplied. There was a time in England when third-class traffic moved in open cars, the passengers being seated on their baggage. In Germany, the fourth-class traffic is subjected to a degree of discomfort whose only palliative is its economy. The following table of average hauls is of interest:

	Average all classes	1	2	3	4	Military
Austria	17	..	..	..	..	..
France	21	40	22	20	..	..
Germany	14	100	18	13	12	51
India	35	..	..	..	..	..
United Kingdom	8	..	..	..	..	..
Canada	54	..	..	..	..	..
United States	39	..	..	..	..	..

While with lower standards of comfort and lower earning power, money is more highly estimated than personal comfort, still from the standpoint of personal sacrifice it is true that the native of India in paying $\frac{1}{10}$ of a cent per mile is making a heavier deduction

from his income than the average passenger in Canada who pays a fraction over two cents.

19. *Passengers per train in foreign countries.*—Whether traffic will move in third or even in fourth-class accommodation in a particular country depends on the length of the journey, the services and conveniences demanded, and, above all, on the general standard of economic well-being. Reference has been made to the large amount of dead weight hauled per passenger in Canada. As indicative of the greater utilization of space, the number of passengers per train as set out in the following table is of interest:

Austria	73	India	183
France	70	Canada	50
Germany	84	United States	47

20. *Zone tariff system.*—As a means of reduction of passenger rates, the “zone” tariff system of Hungary, which was adopted in 1889, was hailed on its introduction as a revolutionary change. As a matter of origin, it may be said that a New Zealander, Samuel Vaile, claims that this idea was first developed in his “stage” system of rate-making in 1882, and from it adopted in Hungary. The zone system was worked out on the basis of fourteen zones which increased in size as the distance from Budapest increased. Within each zone there was a flat rate. In reality, instead of computing rates on a mileage basis, the zone or fixed number of miles was taken as the unit. The idea was to develop longer distance traveling. To the extent that it was successful in

this, the shorter hauls were helping to pay for the longer hauls. The difficulties which have arisen as to journeys between points in two zones, such points being located near the boundary of the two zones, have been such that various modifications have been introduced so that it now differs but little from the ordinary distance basis.

The zone system is used in connection with street railway traffic in the United Kingdom as distinguished from the flat-rate system for the total distance which has been used in Canada and in the United States. In England, the Great Central adopted in steam-railway travel, in 1907, the zone system in the Manchester and Sheffield district. But the situation here was different from that in Hungary, for here the adoption of the zone system was concerned with short distance traffic which had to meet electric railway competition.

21. *Methods used in European passenger rates.*—The methods of building passenger rates adopted on the Continent of Europe are, in general, of three kinds: the strict distance tariff, for example, in Germany, where the fare is so many *pfennigs* for each class for each kilometer traveled; the tapering tariff, as in Italy, under which the charge per kilometer decreases as the distance increases; the zone system, a tapering tariff under which the rates are the same to all stations within a particular zone, radically decreasing to the stations in the next zone. In Germany, the situation may be summarized by saying that the pas-

senger pays, first, the ticket rate; second, an extra charge for the use of an express train; third, a ticket tax; fourth, a fee for registering any baggage which is not carried by hand.

REVIEW

What is the difference between standard and special passenger tariffs? What special tariffs may the railways make?

Describe the ticket regulations of the Canadian Pacific Railway?

What does baggage include? What is the liability of the carrier with regard to it?

Under what conditions is sleeping-car service furnished?

Discuss passenger classification in eastern and western Canada.

What differences would you note in railway travel abroad and in Canada?

Describe the zone system of tariffs.

CHAPTER XV

CONTRACT OF CARRIAGE

1. *Common law obligations of the railways.*—The common law which applied to the earlier, simpler forms of carriage has been made applicable, except in so far as it has been modified by statute, to the railway which is today the most striking example of the common carrier.

Hutchinson, in his work on “Carriers,” has defined a common carrier as follows:

A common carrier or public carrier is one who undertakes as a business, for hire or reward, to carry from one place to another the goods of all persons who may apply for such carriage, provided the goods are of the kind which he professes to carry and the person so applying will agree to have them carried upon the lawful terms prescribed by the carrier; and who if he refuses such goods for those who are willing to comply with his terms becomes liable to an action by the aggrieved party for such refusal.

It was decided, as early as 1769, that the common carrier was liable, as an insurer, for all goods which he undertook to carry. In general, the position of the common carrier at common law may be summarized as follows:

He was liable as an insurer of the goods, except in cases arising from—

1. An act of God
2. An act of the King's enemies
3. An act of public authority (e.g., quarantine)
4. An act of the shipper
5. Inherent vice or defect in the goods.

All these exceptions have been the subject of judicial definition. Items 1, 2, 3 and 4 are, however, subject to the condition that the negligence of the carrier did not concur therein. Negligence is in law the omitting to do something that a reasonable person would do, or doing something that a reasonable person would not do. While carriers are insurers as to freight, in the case of passengers they are liable only for negligence.

At common law, as soon as goods were delivered to the carrier, he had the risk of safe custody as well as the duty of carrying as directed. His liability did not rest on contract. However, it was in time established that, in consideration of a reduced rate, he might limit the common law liability by special contract, providing such contract was not: (1) contrary to an express provision of law; (2) contrary to public policy; (3) unjust or unreasonable.

When the contract of carriage of the carrier was terminated and the goods remained in the possession of the carrier as a warehouseman, he was no longer liable as an insurer, his liability for loss or damage, dependent on some negligence on his part being shown. Before the days of railways, it was established that while carriers of goods were insurers,

carriers of passengers were liable only for negligence in the performance of their contracts.

2. *Bill of lading and its conditions.*—As an incident of the necessary contractual relations of the shipper and the railway, there came into existence a bill of lading setting out the conditions of carriage and the liability of the railway thereunder.

The Railway Act of Canada provides that no contract, condition or by-law, regulation, declaration or notice limiting the liability of a railway in respect of the carriage of any traffic is to be valid unless approved by the Board, and the Board is empowered to define the extent to which such liability may be limited. The Privy Council has decided that the Board has power to authorize a contract relieving the railway from liability to one traveling at a reduced rate, for example, in charge of live stock, for injuries caused thru the negligence of the railway. While the railway is a common carrier, whose liability has been further defined by statute, it may refuse to take any package or parcel which it suspects to contain goods of a dangerous nature, or may require the package to be opened to ascertain the facts. It is not permitted by the statute to carry goods of a dangerous nature, except in cars especially designated for that purpose. By an order of the Board issued January 16, 1913, the regulations under which explosives might be received, forwarded and delivered were defined.

In 1909, as a result of a series of conferences between representatives of the shippers and of the rail-

ways, a uniform bill of lading applicable to Canadian traffic was drafted and approved by the Board. The provisions of this may be summarized under the following characteristic headings.

3. *Liability*.—In general, the railway is an insurer. The limitations of its liability are specifically set out. It is not liable in cases covered by the various common law defenses. Nor is it liable for loss, damage or delay due to differences in the weight of grain or other commodities caused by natural shrinkage or discrepancies in elevator weights, when such elevators are not operated by the carrier, unless the weights are evidenced by government certificates; nor for any loss, damage or delay due to the authority of law or of quarantine detention. It is liable only for negligence when goods are stopped in transit at the request of the party entitled to make such request; or when, in accordance with general custom, the goods are carried in open cars.

When goods are carried at "owner's risk," the shipper assumes the risks incidental to transportation, the railway, however, being liable for negligence.

Except in case of diversion from a rail to a water route, goods carried by water over any portion of the journey are subject to the provisions of the statute and of the bill of lading; provided, however, that in respect of the water route, the carrier is not liable for any loss or damage resulting from the perils of the lake, sea or other water; or from any accident of navigation or the prolongation of the voyage.

The company is not liable for loss or damage arising from any dangerous article.

Under the bill of lading, as existing before 1909, the company assumed no liability off its own lines and acted only as the agent of the owner off its own lines. Under the present bill, in the case of a movement from one point to another in Canada, or when goods are carried on a joint tariff, the initial carrier is liable in respect of any loss or damage occurring on the lines of the connecting carrier, and from which, such connecting carrier is not exempt under the provisions of the bill of lading, the onus being on the initial carrier. The latter is entitled to recover from the connecting carrier. The person aggrieved, however, retains any right of action he may have against the initial or the connecting carrier.

The American rule, as set out in the earlier decisions, was that for a carrier to be liable in respect of the portion of a thru movement which was off its own line, there must be a positive agreement, either express or implied, extending the liability. In the English rule, the position was different. When the carrier accepted for a thru movement to a point off its own line on the line of a connecting carrier, the first or contracting carrier became liable no matter by whom the goods might be lost; it became exclusively responsible and it alone could be sued by the aggrieved person. Any attempt to hold the subsequent or connecting carrier liable for this loss, altho it might have happened from its negligence or fault, would fail be-

cause of the want of privity or contract between such carrier and the injured party. It was, of course, open to the carrier to safeguard itself by special contract.

When the carrier limited its obligation by contract so that it acted only as the agent of the shipper in respect to the movement off its own line, it was naturally a difficult matter for the shipper to localize the cause of loss and determine against whom action should be brought.

4. *Insurance*.—When any person is reimbursed on account of loss or damage, the carrier may have the advantage of the insurance in effect upon such goods, subject to its reimbursing the person so assured for the premium paid.

5. *Liability as a warehouseman*.—The railway is not liable, except as a warehouseman—in which capacity it is answerable for want of reasonable care—for loss, damage or delay caused by fire, occurring forty-eight hours on general traffic, and seventy-two hours on bonded goods, after written notice of the arrival of the goods at destination has been sent or given. Both these time-periods are exclusive of legal holidays. After these periods have expired, the goods may be, on the warehouseman's liability, kept in the car, station or place of delivery, subject to reasonable storage charges; or the goods may be removed to a public or licensed warehouse and there held at the owner's cost and risk until he sees fit to remove them.

6. *Storage charges.*—For example, C. P. R. tariff, C. R. C. E 3122, effective April 14, 1916, provides both on inward and outward freight for forty-eight hours free time, exclusive of Sundays and legal holidays, as well as the period of any delay for which the Company alone is responsible. Thereafter, less than carload business is charged 3 cents per 100 pounds for the first week, or part thereof, and 6 cents per 100 pounds for the second week, or part thereof, and for each succeeding week or part thereof. Now, there is a flat rate irrespective of classes. Formerly the rates were for the first week or part thereof—

1	2	3	4	5	6	7	8	10	Classes
$\frac{3}{3}$	$\frac{3}{3}$	$\frac{3}{3}$	$\frac{3}{3}$	$\frac{3}{3}$	$\frac{1\frac{1}{2}}{3}$	$\frac{1\frac{1}{2}}{3}$	$\frac{1\frac{1}{2}}{3}$	$\frac{1\frac{1}{2}}{3}$	Cents per 100 lbs.

For the second week, or part thereof, and each succeeding week, or part thereof—

1	2	3	4	5	6	7	8	10	Classes
$\frac{6}{6}$	$\frac{6}{6}$	$\frac{6}{6}$	$\frac{6}{6}$	$\frac{6}{6}$	$\frac{3}{3}$	$\frac{3}{3}$	$\frac{3}{3}$	$\frac{3}{3}$	Cents per 100 lbs.

There was also a minimum of 15 cents for the first week, or part thereof. This is continued.

The increase in the rates affects the carload commodities which usually fall in the classes 6 to 10. The less-than-carload commodities falling in the classes 1 to 5 are not affected.

7. *Warehouse defined.*—The tariff defines the term “warehouse or shed freight” as referring to less-than-carload traffic usually handled in the warehouses of the company, including regular freight sheds and auxiliary warehouses owned and operated by it, but

not warehouses which, tho erected on the lands of the company are not owned or operated by it, nor warehouses or other buildings the property of the company, but leased to other parties. The commodities so defined are, after the expiration of the free time, held at owner's risk of loss or damage, except loss or damage from fire, unless caused by invasion, insurrection, riot, civil commotion, military or usurped power.

8. *Storage and demurrage charges.*—Carload freight received in cars and subsequently unloaded on the premises of the company is subject to demurrage rules while in cars, and to storage charges after being unloaded. Under the former bill, the responsibility of the railway ceased when the goods were placed in the company's sheds or warehouses at destination, and storage charges ran from twenty-four hours after arrival.

9. *Loss and damage.*—Loss or damage is computed on the basis of the value of the goods at the place and time of shipment, plus freight and duty, if any, paid, unless a lower value has been declared, in which case the lower value governs, even if the loss or damage is due to negligence.

Notice must be given, in writing, to the railway either at the point of origin or at the point of delivery, within four months after the delivery of the goods; in case of failure to make delivery, notice must be given within four months after a reasonable time for delivery has elapsed. Under the old bill, claims for dam-

ages or loss had to be presented at the nearest place of delivery within thirty-six hours after delivery of the goods.

10. *Payment of charges.*—The owner or consignee may pay freight either before or after delivery. Under the old bill, the charges had to be paid before delivery. While the railway may, in practice, give a period of credit for the settlement of such charges it is not under legal obligation to do so.

The Railway Act provides that on refusal to pay tolls they may be recovered in any court of competent jurisdiction. Instead of bringing action, the railway may seize the goods and hold them at the risk of the owner as security for the payment of the charges. If the tolls are not paid within six weeks, the railway, after advertisement, sells the goods, reimbursing itself out of the proceeds. If the goods remain in the possession of the railway unclaimed for six months, it may, after public notice, sell the goods, reimbursing itself out of the proceeds. If the balance remains unclaimed after three months, it is to be deposited with the Minister of Finance for the public use.

11. *Forms of the bill of lading.*—The bill of lading has three sets of documents: (1) the original bill of lading; (2) the shipping order; (3) the memorandum; 1 and 3 are for the shipper; 2 is for the railway. The railway practice is, when claims are made, to require the surrender of the original bill of lading. This serves two purposes; being the original, it requires no verification; and, being in the company's

possession, it cannot be wrongfully appropriated by any person who might otherwise use it as a basis for repeating the claim.

There are two bills of lading—the straight and the order bill. The papers concerned with the straight bill are printed on white paper; the order bill is printed on yellow paper, while the shipping order and memorandum are printed on blue paper. The bill of lading has a uniform size, viz., 8½ inches by 11 inches.

When the “order” bill is used, it is for transactions negotiated thru the banks. For example, an Ontario grain dealer may sell to a firm in Toronto. He draws a draft either on sight or demand on his consignee, and attaches this draft to the bill of lading which carries title to the goods. His bank will be instructed to hold the document until the draft is paid. The net amount of the draft goes at once to the credit of the dealer’s account. Then the bank owns the draft. It forwards the draft and bill of lading to Toronto. The Toronto firm must pay the draft in order to get possession of the bill of lading, which is its title to the grain.

The bulk grain bill is an “order” bill with the same general terms as have been summarized above.

In 1904, a uniform bill of lading was adopted in the United States. Application was made to the Board to approve of this bill in the case of shipments from any point in the United States into Canada and in the transit trade thru Canada. In making this

application, the railways set out that it was desired to settle the question of the *lex loci contractus* on shipments from different states into Canada, the law not being the same in these different states. Therefore, as it was phrased, the request was made for the Board's protection by way of approval so far as Canadian transit was concerned. The approval was granted in 1910.

Two special forms to be noted are the special contract on silver and other valuable ores, in which the railway limits its liability to \$500 per net ton, and the household goods "release" in which a lower rate is given on a released valuation of \$5 for any one piece or package.

Both in English and Canadian law it has been recognized that the carrier may, by contract, exempt itself from liability for negligence; such exemption has, however, to be put in express and unambiguous terms. There are a number of contracts dealing with liability in respect to particular commodities or services. The livestock contract is at present being worked over by a special committee of shippers and railway representatives. Men in charge of property other than live stock are required to sign a release from claims for injury, whether caused by negligence or not. The potato contract of the Vermont Central contains an exemption from negligence. The same provision occurs in the general release forms of the Michigan Central and the Niagara, St. Catharines, and Toronto Railways. It is also to be found

in the contracts of the Michigan Central and the Toronto, Hamilton and Buffalo in the case of animals carried in baggage cars. In the case of circus contracts, a number of Canadian railways recite that they act neither as common nor as special carriers, but simply as hirers of equipment and train crews for the circus in respect of the transport of its outfit, and that the latter assumes all risks, including negligence.

12. *Due diligence*.—Unless arranged under special contract, the railway is not bound to transport goods by a particular train or vessel, or in time for a particular market. Its obligation is to use “due diligence.” Due diligence in law means everything reasonable, not everything possible. The question of what is a reasonable time for delivery is one of fact for the jury, and it has been decided that no definite rules can be stated as to what will and what will not constitute unreasonable delay, as this must depend on the circumstances of each case.

REVIEW

What are the common law obligations of carriers?

What is a bill of lading?

Give the limitations of a railway's liability.

What is the extent of a railway's liability as a warehouseman?

What are the forms of a bill of lading? What is the difference between a straight bill and an order bill?

Define “due diligence.”

CHAPTER XVI

MOVING THE TRAFFIC

1. *Actual car movements.*—The shipper is interested in obtaining a prompt supply of cars with prompt movement in transit. The railway is interested in obtaining the greatest possible efficiency, since its cars are its money collectors. But while it might appear that there should be no difficulty in obtaining an ideal combination of interests, nevertheless there are difficulties in practice. Expedited movements, e.g., live stock, time freights, and various other circumstances and conditions interfere with the balance of mutual satisfaction.

An ordinary freight car while in motion on the road may be reckoned to move at 10 miles per hour. How far the performance falls short of the possible movement may be gathered from the following summary setting out the average number of miles traveled by a freight car in a day:

1908	1909	1910	1911	1912	1913	1914	1915
18.1	24.4	24.9	27.2	27.6	23.9	20.9	18.2

Putting certain comparisons in a summary way, the following results for 1915 as compared with 1908 are available:

Freight train mileage per freight engine decreased by.....	12 per cent
Tonnage increased by.....	38 per cent
Freight train mileage increased by.....	7 per cent

That is to say, tonnage has been increasing more rapidly than the work to be done in hauling this tonnage.

In Canada, in 1915, the average haul of a ton of freight was 202 miles. With a freight car moving 18.2 miles per day, it thus took on the average 11 days to make this journey. Assuming that as soon as the car ends this journey it can start on another, the maximum number of trips it can make in a year would be thirty-three.

2. *Manifest freight attains high speeds.*—At the same time there has been an increase in the cubical contents space of the car, and a great increase in maximum tractive efficiency. For example, a Grand Trunk engine built in 1873 had a tonnage rating of from 300 to 550 tons, while an engine built in 1912 for the same system had a rating of from 1,500 to 2,500 tons. Time freight or manifest freight—higher grade goods moving in train loads where time is important and there is a movement on a relatively fixed schedule—attains high speeds. Behind one engine the Wabash moves out of Sarnia tunnel 2,000 tons of such freight, which goes forward at 25 miles per hour. It is evident that, in general, the transportation efficiency is far within the maximum.

3. *Demurrage.*—Demurrage is a charge in addition to the rate, charge being intended to compel prompt loading or unloading of cars. The word is maritime in its origin; as early as the twelfth century it was used to express the payment of detention of a vessel beyond the normal time required for loading or

unloading. In railway practice, a demurrage charge is not a car rental, but a penalty charge. In Canada, this is known as a car-service charge. In the United States, "car service" is used to describe inter-railway handling of cars, and the word demurrage is used to describe what the Canadian railways call a car-service charge. It does away with confusion to use the word demurrage in this connection thruout the Text.

The first Car Service Bureau in the United States was organized at Omaha in October, 1887. This was, however, concerned only with a cooperative organization to deal with common interests. The principle of such a charge had been recognized as early as 1872. In Canada, the principle of such a charge was adopted by the Canadian Pacific and the Grand Trunk in 1892; it was subsequently extended to other railways.

In 1906, the Canadian Car Service rules (demurrage) as amended, were approved by the Board. Under these, forty-eight hours is generally allowed for loading or unloading a car. There are certain modifications of this rule. In the unloading of coal, coke and lime, in bulk, and in the loading and unloading of boards, deals and scantling, there are seventy-two hours' free time. Lumber and hay are allowed, for export, five days' free time at Montreal and tide-water ports. In western Canada, under the terms of the Canada Grain Act, twenty-four hours' free time for loading is allowed. When it is necessary to clear customs, twenty-four hours' additional free time is allowed for this purpose. Moreover, in the

various cases the consignee is allowed twenty-four hours after arrival to pay the tolls or charges and give orders for special placing and delivery. For all time in excess of the periods above defined, there is a charge of \$1 per day per car.

4. *Causes of demurrage.*—Difficulties in unloading cars may arise from conditions for which the consignee is not responsible and over which he has no control. When local weather conditions render loading or unloading impracticable during business hours, the time allowance is to be so extended as to show the full free time of suitable weather. There is also the "bunching rule," whose scope is best indicated by quoting it.

Rule 7. When owing to conditions, for which the railway company, or connecting companies, is or are responsible, or to any neglect or default of its or their agents or employes or to storms or floods, or to accidents on a railway, or accident to the equipment of the railway company or companies, cars are tendered to the consignee in numbers beyond his ascertained reasonable ability to unload within the authorized free time, such additional time shall be allowed as may be necessary with the exercise of due and reasonable diligence on the part of the consignee to unload the cars so in excess.

Each railway has its own car-service officials and department. In addition, there is a Car Service Bureau, which was organized in 1906, and which deals with complaints between railways and with complaints from individuals as to the amount of demurrage assessed.

The results of the demurrage situation east of Port

Arthur for a given period are summarized in the following tabular statement:

DEMURRAGE EASTERN LINES, OCTOBER, 1912, TO JUNE, 1913

	Per cent of Cars Released in Free Time	Rail- way	Con- signee	Total	Collection per Car Detained over Free Time
Oct.-Dec., 1912.....	93	.66	2.07	2.73	\$ 4.63
Jan.-March, 1913....	96	.52	1.88	2.40	10.70
April-June, 1913....	94	.46	1.90	2.36	4.13

The high average collection per car in the period January to March, 1913, was due to special conditions which will be referred to later.

The summary of the situation, in the same territory, for the year ending June, 1916, is as follows:

	Per cent of Cars Released in Free Time	Rail- way	Con- signee	Total	Collection per Car Detained over Free Time
July-April, 1915.....	94	.35	2.03	2.38	\$4.51
Oct.-Dec., 1915.....	93	.36	2.03	2.39	3.37
Jan.-March, 1916.....	92	.40	2.49	2.89	4.54
April-June, 1916.....	90	.42	2.28	2.70	3.74

The cars handled amounted to 1.6 millions. This was equivalent to handling all freight cars in Canada eight times during the year.

5. *Claims presented.*—During the year ending May 31, 1916, there were presented to the Canadian Car Service Bureau claims amounting to \$53,000; four-fifths of this amount was adjusted.

6. *Demurrage and car shortage.*—The importance of the demurrage rules is especially bound up with the question of car shortage, which is a phenomenon

that unfortunately often presents itself in the fall of the year. In the Canadian West, grain has to be rushed to the Lake front in as large an amount as possible before the close of navigation. Consequently, large stocks of cars have to be accumulated. At the same time, the fall is a busy shipping season in the field of general merchandise. Again, in the trade between Canada and the United States there are, for example, large movements of hay. If this hay is consigned to a readily congested terminal, such as New York, the movement of additional cars into the New York terminals may be stopped for a time. This is done by the issuance of a notice known as an embargo. The embargo remains in force until the congestion is relieved. In the meantime, the hay cars remain under load either in the terminals or on the road. A car may be tied up in this way for two or three months.

While it is the intention of the rules that a car shall be placed, loaded or unloaded in as short a time as possible, with the free time as a maximum, it is possible that the full free time may be taken up. Taking a car held over the free time, in eastern Canada, in June, 1915, the following results are obtainable:

(1) Time for paying charges and for placing...	1	day
(2) A car may be held for loading.....	2	days
(3) A car may be held for unloading.....	2	days
(4) Detention of consignor and consignee.....	1.88	days
(5) Railway detention .....	.31	days
(6) 202 miles at 10 miles per hour.....	.84	days
		<hr/>
Total	8.03	days

Since the average freight-car trip in 1915 took 11 days, this leaves 2.97 days unaccounted for. On the basis of the average number of days per car trip in 1915, each freight car had an average efficiency of 33.1 trips per annum.

It should be pointed out that as the car service details for the section west of the Lakes are not published there may be a factor of error in taking as applicable in the West the results worked out in the East.

7. *A matter of controversy.*—Around the question of this detention much controversy wages. In an exhibit submitted by the western branch of the Canadian Freight Association to the Board, details were given for a period July 1 to December 15, 1912, for western lines covering 9,289 cars held in excess of five days over free time, on which there were 106,034 days' detention. A detention of as high as 152 days is noted in one case. The total number of days' detention was equal to 10,600 additional freight car trips which might have been performed in the period covered. If further, the five days over free time, which are excluded from this exhibit are taken into consideration, the total number of days' detention would be equivalent to 15,200 additional car-trips; this is equivalent to an addition of 10 per cent to the car supply. On the other hand, shippers furnished many examples of delays in transit. Between Hawkesbury and Hull, a distance of 88 miles, 9 days were taken in transit, and between Hawkesbury and Toronto, a distance of 348

miles, 15 days. The average time of transit for 65 cars, between Alberta points and the head of the Lakes, was 56 days. Complaints were also made by the shippers of delays in placing cars, as well as of delays in moving cars under loads; examples of two, three and more days' delay in lifting a car after it was loaded were given.

Various suggestions are made by the railways as to the method of meeting this difficulty. In a circular issued by the Car Service Department of the Grand Trunk, the following suggestions are made: heavier loading, prompt unloading, loading commodities at other than rush periods, shippers supplying themselves with adequate warehousing facilities. This company has also circularized its employes instructing them to encourage the shippers to load and unload promptly and to capacity. It pertinently admonishes its employes, "Remember, standing cars earn no money—keep them moving."

In the figures of western lines already referred to analysis points to delays in terminals as an important factor. The figures of the Canadian Pacific cover 338 stations. The following points, Calgary, Edmonton, Lethbridge, Moose Jaw, Medicine Hat, Port Arthur, Regina, Saskatoon, Swift Current, Vancouver and Winnipeg, were responsible for 60 per cent of the car detention and 50 per cent of the car-day detention. The figures of the California demurrage bureau show that San Francisco, Oakland and Los Angeles, with 24.59 per cent of the cars handled, had 36.25 per cent

of the cars held over time and incurred 34.23 per cent of the demurrage charges. While the railways contend that they have increased their terminal facilities in excess of the unloading facilities of the consignees, the admonition of the Grand Trunk to its yardmasters and yardmen is pertinent: Expedite movement "by realizing that a yard is a place to get cars out of, not a place to get cars into." Delays in transit may, in the case of a single track road, be due to inadequate side track accommodation. If the terminals of such a road are congested the cars block up back on the line.

8. *Higher demurrage charges.*—Urging that the present charge is not a sufficient deterrent, the railways point to the fact that the value of the car to the railway has increased. When the dollar rate was first adopted in the United States, in 1872, the normal car held fifteen tons and had an average load of about six tons. Now there are 30-ton cars with an average load of eighteen tons. They point out that in Canada the average daily earnings of a freight car are \$2.52, and that the demurrage charges should be commensurate. The shippers rejoin that, when operating expenses are deducted, a car nets about \$1.05 a day.

In November, 1912, application was made to the Board for a temporary increase in demurrage charges. It was represented that a car shortage was impending, and that an increased charge, by stimulating the loading and unloading of cars, would increase the available supply of cars. Reference was made to the fact that to meet a similar situation the Temiskaming and

Northern Ontario had for a short time enforced a \$3 rate. An order was issued permitting between December 5, 1912, and April 1, 1913, an increase of the rate to \$2 for the first day over the free time, and \$3 for each succeeding day thereafter.

The following statement presents a comparison of the January-March period of 1912 with the same period for 1913; the former being under the \$1 rate, the latter under the increased rate:

Period	Total No. of Cars	Total Cars Detained	Per cent of Cars Released in Free Time	Aver. Detention Days			Coll'n per Car Detained
				By.	Consignee	Total	
Jan.-Mch., 1912....	351,193	18,157	95	.45	1.89	2.34	\$ 4.27
Jan.-Mch., 1913....	401,481	17,345	96	.52	1.88	2.40	10.70

In California, as a result of the congestion of the San Francisco and Oakland terminals after the earthquake, high demurrage rates were adopted. These became general, and so between July, 1909, and April, 1911, there was a rate of \$6 per day on the intra-state traffic, while on interstate traffic the rate was \$1. In March, 1911, 98.12 per cent of the cars in state traffic were released in the free time, while on interstate traffic the percentage was 94.79 per cent. The excess over free time on the state rate was 1 day, while on the interstate traffic it was 2.15 days. In May, 1911, a \$3 rate went into force on the state traffic. The same rate was adopted on interstate traffic in February, 1913.

In August, 1913, the percentage released in free time on state traffic was 98.12 per cent, while on

interstate traffic it was 97.20 per cent. A considerable part of the difference is due to the fact that on the state movement the originating road has better control of the movement. Further, in California a great part of the movement is concerned with one-line hauls on which the originating carrier has control thruout. On the interstate movement there are delays in connection with "order" shipments, delivery of coal direct from track to the consumer and contractors' supplies shipped in advance of actual demand therefor.

The Pacific Car Demurrage Bureau, in its brief before the Interstate Commerce Commission in 1912, quoted the manager of the Weed Lumber Company of San Francisco:

Since the demurrage rate of \$6 per car went into effect in 1909, and later reduced to \$3, reasonable terms of loading and discharging being allowed, we have had a fairly abundant supply of cars, even in the most restricted season of the year when the crops were moving. To my mind the demurrage charge of \$6 per day, after reasonable time allowed for loading or discharging, would be more advantageous to the shipper than a lower rate, because of the fact that it would keep equipment from being used for storage purposes and keep it free for transportation purposes.

9. *Special delays occur in unloading.*—The latest figures available are in a special report for the four months ending May 31, 1916. They show that under the demurrage rate of \$3 per day, 1.74 per cent of the cars in California are held over free time. The greatest delay is in unloading. More than half the

total number of cars were held for loading; but less than one per cent of these were held overtime; whereas 2.82 per cent of the cars held for unloading were held overtime. In California, 34 per cent of the cars held overtime contained hay, potatoes, grain, fruits and vegetables, i.e., commodities held for market conditions. Sand, rock, cement, etc., made up seven per cent more, while coal represented three per cent and automobile cars four per cent.

10. *Average demurrage.*—While the railways have made suggestions, as indicated, for the improvement of the demurrage situation, the shippers have from time to time made recommendations that either average demurrage or reciprocal demurrage should be adopted.

Under the national demurrage rules of the United States it is provided that when the shipper so elects, and gives assurance of prompt payment to the railway, the demurrage charges may be settled on a monthly balance of debits and credits worked out as follows: a credit of one day at a rate of \$1 per day is given for each car released within the first twenty-four hours of free time; a debit of one day is charged for each car held for each day or portion thereof that the car is held beyond free time. In no case is a credit of more than one day allowed on any one car, nor may more than five days' credit be allowed in cancellation of debits accruing on any one car. If there is an excess of credits, no payment is made therefor. The

credits of one month do not apply on a subsequent month. When a shipper elects the average system, he has not the advantage of the allowances in respect to weather conditions and "bunching" which are available to those using the straight demurrage rules.

Those who argue for an average arrangement treat the free time allowance per car as a matter of right to which each shipper is entitled. A representative of the Canadian branch of the International Harvester Company testified that the company's yard tracks could be worked more efficiently under the average system. Extra switching would not be necessary in order to get out a car in the order of date and thus save demurrage and the car could be used regardless of date of arrival.

In a summary way the arguments advanced for average demurrage are: it means the more rapid placing of cars for loading or unloading, thus effecting a saving on the cost of handling by the railways; cars will be emptied faster and will be placed at the disposal of the carriers earlier, and not only the receiver who takes an interest in releasing his cars, but every shipper, will be benefited; and it will remove the friction which frequently arises between the carriers and the receivers in respect of weather interference and bunching in transit. The railways contend that the maximum free time is intended simply to give a maximum reasonable time to cover not only those who have good unloading facilities, but also those who have

poorer facilities, and that the shipper should use only so much time as is necessary. In dealing with the relation of detention to car shortages the Georgia Railroad Commission said in 1912:

While certain free time is allowed for loading and unloading cars, this does not necessarily mean that it ought to be consumed in every instance and regardless of other considerations or circumstances. Cars should be loaded and unloaded as promptly as possible after being placed. It is not fair to the carriers or other shippers to hold them for 48 hours, just because one has that much free time by law, when they could just as well be handled in 6 or 12 hours.

In a paper presented to the National Association of Railway Commissioners, at Washington, on October 30, 1913, Mr. James O. Klapp, the manager of the Wisconsin Demurrage Bureau, said:

As a concrete example of the working of this rule, we call your attention to the comparative results of two large firms in the City of Milwaukee, who are working under the average agreement.

	Number of Cars	Days Delayed	Average Delay Per Car Per Day
Under straight demurrage {			
March and April, 1910. . }	2962	2339	0.79
Under average agreement {			
March and April, 1912. . }	3796	5525	1.46

Delay under the average agreement exceeds delay under the straight demurrage rules 0.67 days per car per day—actual loss in efficiency 2,543 car days for the two months.

11. *Reciprocal demurrage.*—Under the Railway Act the Board is specifically given power to deal with reciprocal demurrage. Under reciprocal demurrage

the railways are penalized in the same way as the shippers. The penalty may be for delay in supplying a car or for delay of the car in transit, or both. Applications, in this connection, take on two forms. One demands that the railways should be required, under penalty, to place cars for loading within forty-eight hours after they are ordered; to lift the cars within twenty-four hours after notification of loading; and to place cars for delivery at destination within forty-eight hours after arrival. The second form of application requires that, in addition to these conditions, the railway should also be penalized if it does not transport each loaded car a fixed distance, say 100 miles per day, twenty-four hours additional being allowed to complete transfer from one line to another, when necessary.

The argument for reciprocal demurrage from the standpoint of its analogy to the ordinary demurrage charge has been very well put by Mr. J. E. Walsh, Traffic Manager of the Canadian Manufacturers' Association:

If it is fair (and we say that under ordinary circumstances it is fair) and in the public interest that a charge should be made when freight cars are detained in loading and unloading in order that they may be kept available for service, it is reasonable to expect that the railways should be subject to a similar penalty when they delay cars, entailing serious loss to the public.

The shippers ask for reciprocal demurrage, not from a desire to collect the penalty, but to insure car supply.

The advantages claimed for it are threefold: that it will expedite supplying cars, that it will hasten movement in transit, and that it will insure greater promptness in delivery after arrival.

The railways say in substance: it is not demurrage and it is not reciprocal. They hold that delays may be attributable to lack of care in ordering cars. For example, at a grain-shipping point forty-six applicants may book orders for cars to be placed at a grain elevator on the same day. At a country elevator it is a good day's work to load four cars. Therefore, penalties would accrue, when, if orders had been spread out, no such forfeitures would be invoked. It is contended that in times of especially active car movement it would be unreasonable to require, under penalty, a supply of cars in forty-eight hours. The delays are attributed, in great part, to the insufficient warehousing facilities of shippers who find it cheaper to hold goods in cars at a penalty of \$1.00 per day than to supply warehouses.

The Board found that a shortage of cars in one large Western city had been due to the large number of cars held under load in the terminals. When the attention of the local board of trade was drawn to this fact, it took steps to induce quick unloading.

The railways urge that while allowance is proposed for the time taken in transferring from one line to another, equal or greater allowance should be made for passing thru terminals where the breaking up of trains and reclassifying of cars necessitates delays.

It is claimed that there is no reciprocity between a penalty charge on a car which the railway owns and a fine on a car which the shipper hires. It is further contended that reciprocal demurrage would, by collusive arrangements, open up the way for rebating, since it would be possible to allow a favored shipper to have cars even tho it were known that the terms on which they were ordered under the reciprocal demurrage could not be adhered to. In respect to mileage requirements the railways quoted the following average movements during the grain shipping season at the end of 1911:

	Sept.	Oct.	Nov.	Dec.
Great Northern	27.7	31	24.8	20.2
Northern Pacific	24.4	27.2	24.1	20.1
Grand Trunk Pacific	25.4	25.6	25.5	26.9
Canadian Pacific (W. Lines)	33.97	35.51	28.38	26.04

The railways contend that the requirement of a definite mileage per day, irrespective of climatic and other conditions over which they have no control, would be unfair and unworkable.

12. *Railway interrelations and per diem charge.*—The large development of thru business causes loaded cars to go to foreign lines. The American Railway Association has a code of Car Service Rules and per diem charges. The leading Canadian roads are members of this Association. The essential rules covering the homeward movement of foreign cars, i.e., cars of another line, are that foreign cars must be promptly returned to their owners loaded (via any

route) so that the home road will participate in the freight rate; or loaded to the road from which originally received, if such loading is in the direction of the home road, but not otherwise; or loaded to an intermediate road in the direction of the home road; or loaded in local service in the direction of any junction point with the home road. There is a per diem charge in the case of foreign cars. This charge, which has varied from time to time, was, before December, 1916, 45 cents. It has now been raised to 75 cents and provision has been made that it may, for short periods, be raised to \$1.25. This charge is not analogous to the demurrage charge, for, in addition to the per diem, the home road participates in the rate when the car has moved off its own lines under a thru rate or moves on to its own lines under a thru rate.

The box car has been called a "legal tender" car since it is a car of general and interchangeable service on any line. It would seem justifiable, with a view to preventing car shortage, to equalize car equipment thru a car pool. At present, the road which is short of equipment may, notwithstanding the rules, steal foreign equipment that happens to be on its lines, since it is cheaper to pay per diem than own cars. As a further development of this, by means of building a standard box car—altho such cars are not far apart in standards today—the building of cars in quantity would enable them to be turned out at a lower price. The Car Service Commission of the American Railway Association, in a report published early in 1913,

estimated that this saving would be \$65 per car—6½ per cent of the present cost. In the words of that Commission—

To be just to the railways themselves and to the public generally, this pool should be regulated to the end that there shall be secured to every road the use, when it needs them, of its quota of "legal tender" equipment, whether its own or the equivalent in foreign cars, or, in the alternative, compensation in money for the difference. Such regulation can be made effective only by the abandonment of the right of physical return to the owner of its own cars, and the substitution of the right to possession and use by each line of "legal tender" cars in kind equivalent to the cars by it owned and contributed to the pool. The objections to recognizing a box-car pool in the past have rested largely on the desire of roads which have supplied their quota of "legal tender" equipment and have maintained them on high standards, to be assured of the use of cars measuring up to their standards. The answer is that in practice existing car service rules have not secured this result so far as box cars are concerned.

The enforcement of the rules as to prompt return of cars is in the hands of a commission of the American Railway Association. The rules applying are as follows—a road diverting a foreign car shall pay to the owner the sum of \$5, in addition to the per diem, and shall report this as a separate item for the month in which the car was diverted. When the diversion is not reported there is a charge of \$10, one-half of which goes to the Association.

The Canadian railways have two general associations—the Canadian Freight Association and the Canadian Passenger Association. These deal with mat-

ters of general concern; for example, in the case of the Passenger Association, with excursion rates and baggage rules; in the case of the Freight Association, with classification, general switching tariffs, and tariffs of general scope.

13. *Interswitching*.—Two or more lines may participate in a relatively long haul. The occasion may also arise where, while two or more roads enter one city, a shipper may send his freight over our lines but desires to reach a point situated in the terminals of another railway, or in a section adjacent thereto. The Board has power to provide for a physical connection between such railways so as to afford interswitching facilities. To provide a tariff basis for such services, which were recognized as distinct from the line haul, the Board issued, in 1908, an order, the provisions of which presented analytically are as follows:

TRAFFIC DESTINED TO CONSIGNEES:

- | | |
|--|-------------------------|
| (a) Upon or | } tracks of contracting |
| (b) Reasonably adjacent to | |
| (c) Customarily accepting contracting company's delivery; or | carriers; or |
| (d) Not clearly indicating delivery required. | |

In those cases in which there is a subsequent application for interswitch delivery involving additional service by another carrier, the contracting carrier may collect an interswitching toll from such other carrier not exceeding 20 cents per ton for a distance up to

four miles, with a minimum of \$3 and a maximum of \$8 per car.

TRAFFIC DESTINED TO CONSIGNEES:

- | | | |
|--|---|--|
| (a) Upon or | } | tracks other than those
of the contracting
carrier; or |
| (b) Reasonably adjacent to | | |
| (c) Customarily requiring such other carrier's delivery. | | |

In such cases the contracting carrier may charge, for such interswitch delivery, not more than ten cents per ton for a distance up to four miles, with a minimum of \$1.50 per car and a maximum of \$4 per car. Such other carrier performing the service may charge not more than twenty cents per ton up to the four-mile distance, with a minimum of \$3 per car and a maximum of \$8 per car. The contracting carrier is not required to reduce its revenue below \$8 per car. It will be noted that, subject to the limitation contained in the preceding sentence, the effect of this arrangement is to require the contracting carrier to absorb one-half the interswitch charge.

It is lawful for the interswitching carrier to absorb the tolls charged for the interswitching of competitive traffic.

It has been decided that interswitching requires the railway to which the car is interswitched to receive the car on its private tracks or industrial sidings, but not to afford the service of placing such car on its team tracks.

14. *Industrial sidings.*—A consignor or consignee

handling carload lots may ship or receive freight on the railway team tracks, or he may handle his business on a siding or industrial track of his own. Where raw material is being brought in for manufacturing, it is an advantage to unload it at the plant with a single break bulk movement. Again, as at the plant of the International Harvester Company in Hamilton, when shipments of agricultural implements are being made to the Northwest, it is an advantage to have the loading to the cars done at the plant, for this method economizes both time and money.

To the shipper or the consignee engaged in a business of some volume, the industrial siding has become almost an essential.

Under the Railway Act, a railway may be authorized by the Board to build such branch lines not exceeding six miles in length. When an individual or an industry desires to obtain an industrial siding, application is made to the railway, and a statement is made as to what traffic and how much of it will probably be handled. At the time of application to the Board, the municipality must also be notified if any street crossing is involved.

Each railway has a standard form of siding agreement which the applicant has to sign. The work of construction is performed, and all material, except rails, fastenings, spikes, etc., is supplied by the applicant, unless he desires the railway to do so at his expense. The applicant has also to secure the right of way.

For the movable material, i.e., rails, etc., so furnished, the applicant pays a specified yearly rent. Rates being as good and service being as satisfactory as on the other lines, the applicant is to ship over the lines of the railway with which agreement is made. The railway is to have the use of the siding so far as not needed by the applicant; and may also permit the use of it by others upon proper compensation to the applicant. Any dispute about compensation, in default of payment, is to be settled by the Board.

Provision is made for terminating the agreement in the case of default in payment of rent. Also either party may terminate the agreement on two months' notice, provided the permission of the Board has been obtained.

When the railway and the applicant cannot agree regarding a siding to an industry, established or to be established, the Board may order the construction at the expense of the applicant, with provision for refund of such cost out of the freight rates collected.

15. *The work of the claims department.*—Claims may arise from train collisions and derailments, breakage, pilferage, leakage, soakage, weather conditions, non-delivery or delayed delivery, overcharges due to erroneous rate quotations, misclassifications, errors in way-billing, weighing. There are also claims arising from accidents to passengers and claims for cattle killed on the tracks. These are simply mentioned here. The Canadian Pacific deals with about 55,000 claims a year, the Grand Trunk with about 58,000.

There is probably no department of the railway service which has a greater opportunity to create friction, or a better opportunity thru the exercise of tact to prevent friction. Shippers constantly complain that there are undue and unreasonable delays in connection with the settlement of claims. The railways respond that while they use every endeavor to settle claims promptly, delays in settlement are unavoidable. While many claims are made in good faith, others are fraudulent; and so all must be tested.

In case of claims arising in connection with movements local to the line, the matter should be promptly sifted and settled. But when two or more lines are involved in the haul, there is a reason why greater delays may take place. It has been contended by shippers that interest should be allowed on claims after a certain date. It is further maintained that the expense bill should give more detail as to advance charges of other lines and the additional charges, if any. While it is the regulation of the railways that as full information as possible should be given on the expense bill, in various instances the absence of it has made it difficult for the shipper to check the items. If claims cannot be satisfactorily settled they have to be dealt with in the courts.

In a hearing before the Board an exhibit was submitted by the Canadian Northern for its lines west of Port Arthur, setting out the disposition of claims filed on account of error in rates, weight, classification, or

accounting. For one year, the following details were presented:

Claims received, local 1962

Claims received, foreign 1423

3385

Adjustment made as follows:

Local—

16 % adjusted in less than 7 days

21.8% adjusted in less than 14 days

9.3% adjusted in less than 21 days

11.1% adjusted in less than 30 days

41.8% adjusted beyond 30 days

13.3% took over 3 months to adjust.

Mean average—28 days

Foreign—(refers to claims on joint business):

9.3% adjusted in less than 7 days

10.5% adjusted in less than 14 days

5.7% adjusted in less than 21 days

8.4% adjusted in less than 30 days

6.61% adjusted beyond 30 days

37.3% took over 3 months to adjust.

Mean average—37 days

REVIEW

Explain the meaning of the word, demurrage, as it is used in this Text. What are the rules of the Canadian Car Service in regard to demurrage?

What is the connection between demurrage and car shortage?

What are the arguments advanced in favor of higher demurrage charges?

Give the arguments in support of an average demurrage rate.

Discuss the question of reciprocal demurrage.

Summarize the subject of interswitching; of industrial sidings.

CHAPTER XVII

EXPRESS SERVICE

1. *Express service and its scope.*—Express service¹ is an expedited freight service carried on passenger trains under the personal care of an express messenger. In addition, there is, in the case of towns and cities, either a delivery service or both a pick-up and delivery service. While it is a freight service, the companies performing the service do not own the means of transportation, as in the case of ordinary freight carriers. They enter into contractual relations with the railways for the purchase of space for the carriage of goods. While the railway has a large investment of capital in a fixed form in roadbed and cars, the express company's investment is concerned for the most part with office space, horses, wagons, or motor vehicles for performing pick-up and delivery service.

The express service covers not only the carriage of high-grade parcel freight, but also that of articles of food and drink. Not only are packages carried; provision is also made for the movement of horses in carloads as well as for refrigerator car service in the case of fish and fruit. Provision is made for the shipment of currency, bullion, gold and silver coin, pre-

¹ There were 1148 filings of express tariffs with the Board in 1915-16.

cious stones, valuable papers and securities. A banking business is done thru the issuance of money orders. The returns from C. O. D. shipments are also collected and returned to the consignor.

The movement is not limited to one country alone, foreign shipments also being handled. In addition, various other services are rendered. The wide scope of these is set out in the following extract from a special report made by the Interstate Commerce Commission in 1909:

Commodities of all kinds are bought and transported on orders and are likewise transported and sold on orders. To care for and extend this branch of the business properly, the various companies maintain order and commission departments. . . . Express business is carried on thru order and commission departments in four different ways, viz., (1) a patron may order any commodity, subject to express shipment, which will be purchased by the company's agent and transported to him for express charges; (2) a patron may deliver any commodity, subject to express shipment, to an agent of the company, to be transported to a certain buyer and the agreed sale price to be collected, and transmitted to the shipper for express and money order charges; (3) a patron may deliver any commodity, subject to express shipment, to an agent of a company who will undertake to sell it thru other express agents to the best advantage on shippers' account and transmit the proceeds for express and money order charges; (4) a patron may request an express agent to perform any reasonable commission, such as collecting tolls, filing papers for record, redeeming pledges, etc., which will be undertaken by the company for agreed charges.

The report continues by stating that the express agent will enter and clear articles at custom houses,

transport goods in bond, exchange foreign money, redeem pawned articles, pay gas bills, and "in short will attend to any legitimate business transaction as the customer's agent."

2. *Early history of express companies.*—In the early days of railway travel in the United States, especially between New York and Boston, there grew up in the case of food supplies a spasmodic traffic of convenience. In some cases a friend in one city would send to a friend in another a package, basket, or bundle which some passenger would undertake to look after on the way; or sometimes the conductor or baggageman would undertake the service for a consideration. Under such conditions, all the risks of loss thru lack of care, as well as all the risks incidental to transportation, had to be borne by the shipper.

In 1839, the modern express service began in the venture of William Herndon, who undertook to carry packages between New York and Boston at fixed rates. He entered into an agreement with the Boston and New York Transportation Company, a water carrier, and the Stonington and Providence Railway, whereby he obtained certain privileges for carrying on an express business. By the former company, he was granted the right to transport in the steamers of the company between New York and Providence, via Newport and Stonington "not to exceed once in each day from New York and from Providence, and as less frequently as the boats run between and from said places, one wooden crate, of the dimensions of five

feet by five feet in width and height and six feet in length (contents unknown) until the 31st day of December 1839." The nature and extent of his undertaking may be gathered from advertisements published in two Boston papers in the latter part of 1839, in which he stated that he

will run a car through from Boston to New York and vice versa via Stonington, with mail train, daily, for the purpose of transporting specie, small packages of goods, and bundles of all kinds. Packages sent by this line will be delivered on the following morning, at any part of the city, free of charge. A responsible agent will accompany the car, who will attend to purchasing goods, collecting drafts, notes and bills, and will transact any other business that may be entrusted to his charge.

In 1855, the *American Railroad Journal* strongly urged that the express business should be done by the railway without the use of any intermediary. There were still, however, difficulties in the way of thru lines of traffic, altho the consolidation of the various small lines was already under way. The American Express Company was founded in 1850 as a result of the consolidation of two private companies. In 1854, Herndon's Company and three others were consolidated into the Adams Express Company. In the same year the United States Express Company was organized. The discovery of gold in California in 1849 led to the creation of various pony express companies. The companies so organized were consolidated in 1866 under the name of the Wells Fargo Company. In general, it may be said that in the

United States the handling of express business by express companies was well established at the outbreak of the Civil War.

3. *Express companies in Canada.*—In the United States the express companies grew up independently of the railways. They have in later years come into very close relationship with them. In various cases the holdings of stock in express companies by particular railway groups give the interests controlling these practical control of the express companies as well. In Canada, from the outset, the express companies have been the creations of the railway companies.

There are operating in Canada today various American express companies—the National, United States, Great Northern, Wells Fargo, and American. The Canadian companies are the Dominion, Canadian, Canadian Northern, and British America.

The Canadian Express Company was organized in 1865 with a nominal capital of \$500,000, subscribed capital of \$275,200, of which 10 per cent was paid in. The capital stock of the company was purchased in 1891 by the Grand Trunk for \$660,000 in cash. The stock of the company is held in trust for the Grand Trunk by a body of trustees who are all directors of the Grand Trunk.

The Dominion Express Company was incorporated in 1882 with a capital of \$1,000,000. When the company began business, 10 per cent of this had been paid up. The stock of the company is held in trust by its directors for the Canadian Pacific.

The Canadian Northern Express Company was organized in 1902 with a nominal capital of \$1,000,000; \$300,000 of this was issued; \$5,000 was paid in cash; of the balance, five shares went to qualify certain shareholders, while the remainder went to MacKenzie and Mann, who thus thru stock ownership control the company.

4. *Arrangements with railways.*—The express company pays an agreed percentage of the gross earnings to the railway over whose lines it operates. For example, the Canadian Express Company pays the Grand Trunk 50 per cent. The balance of the earnings, after the deduction of operating charges, goes to the Grand Trunk, on account of the fiduciary relationship of the express company to the railway.

The operation of an express company is not limited to the lines of the railway which controls it. The smaller railways have no separate express company service of their own, and enter into relationships with one or other of the express companies already referred to. For example, the Canadian Express Company has contractual relationships with the following: Quebec, Montreal and Southern; Quebec Oriental; Inverness Railway and Coal Company; St. Martin's; Windsor, Essex and Lake Shore; the Intercolonial; and other railways. The Dominion Express Company also operates over the Intercolonial.

The Canadian Express Company operates over twenty railways, while the Dominion operates over thirty-seven, and the Canadian Northern over seven.

In the contracts referred to, the Canadian Express Company pays the railway percentages varying from 40 per cent to 50 per cent of the gross.

While the Dominion Express Company enters into arrangements with different railways on a percentage basis of division, its arrangement with the Canadian Pacific is on a tonnage basis. Under the agreement between the Express Company and the Canadian Pacific, it is bound, unless it receives written permission from the railway, to charge for the express traffic per hundred pounds, a sum not less than two and a half times the railway's regular first-class freight rates per hundred pounds between the points where the express packages are moving. The Express Company is obligated to pay to the railway \$100,000 a month, plus such additional sum as will result in there being paid to the railway on express traffic moved between any two given points, the same earnings per hundred pounds as would be afforded by 150 per cent of the first-class rate per hundred pounds between the same points. The amount of \$100,000 mentioned is, under the agreement, subject to revision every two years.

5. *Provisions of an agreement.*—The nature of the relations between an express company and the railway in control may be gathered from the agreement entered into between the Canadian Pacific Railway and the Dominion Express Company on January 1, 1907.

The railway took over the Express Company with

the object of carrying on over its railway an efficient express service under unified management.

The Railway covenanted—

(1) To transport express matter on passenger trains with as much promptness and dispatch as is usual and reasonable and necessary for the interests of the Express Company.

(2) To furnish necessary space on its passenger trains for such transportation.

(3) To carry the messengers, safes and trunks of the Express Company, at the rate of $2\frac{1}{2}$ cents per mile for the messengers.

(4) To furnish free of charge all necessary ingress and egress to and from stations, and such space on station platforms as is necessary for loading and unloading, provided the railway's business is not interfered with.

(5) The railway to be liable for the death or personal injury of any agent or employe of the railway, if acting jointly for the railway and the express company.

(6) The railway to do all it can, as far as lawful and consistent with its own interests, to advance the interests of the Express Company, and not to afford any other company more favorable express facilities.

The Express Company covenanted—

(1) To carry on an efficient express service over the whole system of the railway and not to discontinue or diminish such service on any part of the system on the ground of its being unprofitable.

(2) Compensation to be as already indicated.

(3) To carry moneys and valuable packages, being liable to the railway therefor, except where loss, damage, or default is caused by accidents to trains of railway.

(4) To receive and forward express matter offered it by the public, except such as is of a dangerous nature.

(5) To be liable for death or injury to its officers, agents

or employes not also acting at the time of injury as a joint agent.

(6) To be liable for loss or damage to express matter, except where occasioned by accidents to the railway's trains.

(7) To furnish the railway daily statements of the weights, and monthly statements of the weights, earnings and expenses.

The Parties mutually agreed—

(1) The agreement to run for ten years.

(2) Station agents and train baggagemen may also become agents of the express company so far as the railway considers compatible with efficient performance of their duty.

(3) Where accommodation is afforded at stations to the express company, it is to pay, in monthly payments, eight per cent per annum on the actual value of the land, building or buildings, or portion of building or buildings, safes and trunks, etc., given up to the use of the Express Company.

(4) Disputes as to the construction of the agreement or the rights and liabilities thereunder to be settled by arbitration.

(5) Milk traffic on passenger trains is exempted from the scope of the agreement.

6. *Arrangements with agents.*—The express company operates not only ordinary express cars, but also refrigerator cars in the transport of fish and fruit. At the larger points it maintains its own salaried agents. At the smaller points, the railway station agent will act as a joint agent of the express company and of the railway. He is paid by the express company, in the case of the Canadian Express Company, by a commission varying from 2½ per cent to 10 per cent of the gross earnings at the point in question. In the case of the Dominion Express Company, he is

paid on a tonnage basis. The result is about the same in either case.

The express business in Canada is concerned primarily with a movement in and out of the larger centers. It is estimated that 64 per cent of the business handled by the Dominion Company, originates at Montreal, Toronto and Winnipeg.

7. *Express classification.*—While it has been suggested that the freight classification might, with some necessary amendments, be adopted to suit express traffic, there are a number of difficulties in the way to prevent this. The great hindrance is that, in cities, express traffic is collected in large quantities and delivered just as trains are departing, when there is no time to handle it under a classification similar to that of freight.

The express classification in use has first to obtain the formal sanction of the Board. The Railway Act states that all its provisions "applicable to freight tolls and freight tariffs, in so far as such provisions are applicable . . . shall apply to express tolls and tariffs."

In express classification, commodities are classed not in groups, as in freight traffic, but according to the rate the commodities take. Express shipments are broadly distinguished as "freight" and "money." Under "money" are included not only shipments of actual money, but also of bullion, stocks, bonds, valuable papers, and various articles of unusual value. "Freight" shipments are sub-classed as "merchandise," "general special" or Scale N, and Scales K, M,

and Section D. There are also special scales and rules covering shipments of "money." "Merchandise" rates are those applying to commodities for which there are no special rates. The "merchandise" ratings in the classification may also be expressed as a multiple of the "merchandise" rating. Articles not shown in the classification, and not analogous to those rated higher or lower than "merchandise," take the "merchandise" rate, which is always expressed at the rate per hundred pounds.

Scale K is a special tariff on ale, aerated waters, etc., and is from 30 per cent to 40 per cent lower than "merchandise." It applies at pound rates on actual weight. Scale M is a special tariff on eggs in cases. Scale N quotes special rates on perishable foodstuffs, such as provisions and vegetables. Originally it was concerned simply with farm produce but its scope has been widened, so that in the group of forty-three articles covered by it there are included, in addition to provisions and vegetables, the following: cuttings, fertilizers, plants, poultry food, roots, scions, seeds and seed grain, stock food, tallow, trees for setting, stearine and tubers. Its rates are from 20 per cent to 30 per cent below "merchandise." Pound rates are charged with a minimum of 35 cents, unless the graduate under this scale or under the Merchandise rate is lower.

Section D rates apply on packages not exceeding five pounds, of books, stationery, lithographs, periodicals, etc., carried in competition with the post office.

At present, the express rates are lower than those of the post office on packages exceeding five pounds. Section D rates are one cent for each two ounces or fraction thereof, subject to a minimum.

8. *Value, weight and space.*—In the ratings of the classification, value, weight and space are considered.

The value of the article is considered, since the normal rate is based on a value per package not exceeding \$50. If the shipper desires the company to assume a liability in excess of this sum, he has to pay additional charges, which are known as valuation charges. These are imposed on the excess value for each \$100 value, or fraction thereof, as follows:

Where merchandise rate is \$1 or less, per 100 lbs..	5c.
Where merchandise rate is \$1 to \$3 per 100 lbs..	10c.
Where merchandise rate is \$3 to \$8 per 100 lbs..	15c.
Where merchandise rate is over \$8 per 100 lbs..	20c.

In the matter of weight, shipments of extraordinary weight or size are carried only under special contract. The factor of weight is considered in connection with the movement of packages of less than 100 pounds weight. When the merchandise rate per 100 pounds is less than \$2, "graduated" charges are assessed on all shipments weighing less than 100 pounds. When the merchandise rate is \$2 or over, graduated charges are assessed on shipments of under 50 pounds. Where the weight is over 50 pounds, pound rates (i.e., the rate per pound at the 100-pound rate) apply.

Space is recognized by the provision that conven-

tional weights shall apply in the case of light and bulky goods, e.g., millinery shipments.

On computations made by the Dominion Express in 1907, 47 per cent of the shipments move on the merchandise rate; the balance are on lower rates.

In the amendment of the Classification by the Board in the express investigation, the owner's risk conditions were eliminated.

9. *Conditions of carriage.*—In the merchandise receipt the liability is limited to \$50 per shipment, except where a higher value is declared and inserted in the receipt. In the express investigation, the express receipts which hitherto gave the companies a very wide exemption were redrafted. The company is not liable:

(a) For differences in weight or quantity caused by shrinkage, leakage or evaporation.

(b) For loss or damage occurring after forty-eight hours (exclusive of legal holidays) after notice of the arrival of the shipment at destination or at point of delivery has been mailed to the address of the consignee, unless such loss or damage was due to negligence of the company.

(c) For loss or damage which can be met by the common-law defenses.

(d) For loss or damage occurring in a custom warehouse.

(e) For loss, damage or delay resulting from improper or insufficient packing, securing, or addressing, or from chafing when goods are packed in bales.

(f) For loss of, or damage to, any fragile article, unless the carrier was negligent.

(g) For loss or damage from delays beyond the company's control.

(h) For loss or damage arising from examination, or partial delivery to the consignee, of C. O. D. shipments.

(i) For damage, loss or partial shortage, unless written notice is given by the shipper at some office of the company within thirty days from delivery.

(j) For loss or damage occurring to shipments addressed to stations where there is no agent of the company, after the shipments have been left at such station.

(k) For non-delivery, loss or destruction in Canada, unless written notice is given by the shipper within four months from the time delivery should, in the ordinary course of transit, have been made.

10. *Liability under revised express receipt.*—Under the Express Receipt, as revised in the Express investigation, the express company was not liable for any loss, damage or delay caused by conditions beyond its control. This condition exempted it from such loss, damage or delay caused by the railway company. The express company, tho performing a transportation service, was a separate corporate entity. The acts and defaults of the railway were beyond its control. In 1915, this was amended so that the express company was liable, if the loss or damage was caused by the negligence of the railway company upon whose

trains or property the shipment was at the time such loss or damage occurred.

11. *Liabilities under various forms of receipts.*—The word “company,” as used in this receipt, includes any connecting express company subject to the Railway Act. The agreement entered into by the signing of the receipt is binding on the shipper and all persons in privity with him, and inures to the benefit of any person or company to whom the shipment may be delivered for the performance of an express service.

There is a money receipt the conditions of which, in respect of liability, are subject to modifications due to the difference in the nature of the commodities—substantially the same as in the case of the merchandise receipt.

In the C. O. D. receipt covering collections by the company, the common-law defenses apply; in addition, the company is exempt from liability for loss by fire unless there has been negligence. It is also free from liability for loss, damage or delay resulting from improper or insufficient addressing or securing.

Under the live-stock contract, the company is exempt from liability for delay, injury or loss from any cause whatsoever unless there has been negligence. The attendant accompanying the animals is required to sign a release from all liability, negligence included.

12. *Standard mileage tariffs.*—The standard mileage tariff gives the merchandise rate. The basis of such a tariff is the question of the division of territory into mileage blocks. In Eastern Canada, these

run up to 100 miles in 25 mile groups; from 100 to 200 in 50 mile groups; and from 200 up to the maximum in 100 mile groups.

When the general investigation of express rates was conducted, the Board found that west of North Bay no such exact arrangement as that east thereof existed as to the mileage groups. Each standard tariff had its own particular mileage grouping, and the groups were irregular and overlapped. Direction was therefore given that there should be a rearrangement with a view to approximating uniformity, so that, for example, any two or more of the western groups should be equivalent to, and included in, the corresponding eastern group, instead of the relation being fractional, as it then was.

The Eastern and Lake Superior standard scales then met at North Bay. Direction was given that, to harmonize with freight conditions, the rates should, instead, break at Sudbury.

The meeting point of the prairie and the mountain express standard mileage scales had hitherto been at MacLeod and at Calgary. Direction was given that the rates should break from one scale to another at the points where the rates broke in the case of freight rates. The direction published was, in summary:

(1) That there shall be four "standard" mileage-basing scales, viz.:

(a) On all lines east of and including Windsor and Sudbury, excluding the lines of the Temiskaming and Northern Ontario Railway.

(b) On all lines west of and including Sudbury, to and including Sault St. Marie, Crow's Nest, Canmore, and Thornton, Alberta; also north of and including North Bay.

(c) On all lines west of and including the terminal points set out in the preceding section to the Pacific Coast and to Vancouver Island transfer points.

(d) In Vancouver Island.

(2) That the basis of (a) should not exceed \$3, of (b) \$5, of (c) \$6, per 100 pounds for the 900-1,000, mile group. In Vancouver Island, the mileage groups were to be harmonized without increasing the rates.

The standard rates so fixed were further reduced by the Board in April, 1913, when it was directed that instead of the \$5 and \$6 rates already referred to there should be substituted rates of \$4 and \$4.75 respectively.

13. *Differences in traffic conditions.*—In sanctioning differences in rate basis between the sections covered by the different tariffs, differences in traffic conditions were recognized. In rearranging rates under its recent decision on express rates in the United States, the Interstate Commerce Commission has taken a similar position. The following words are from its judgment:

We have, therefore, felt that it was necessary for us to recognize the variation in the density of traffic and of population and in the expense of operating railroads in the different

sections of the country. With this in mind as a basis for the formation of rates, the country has been divided into five grand subdivisions. These subdivisions conform generally to those recognized by the rail carriers, and which this Commission has, in the consideration of freight rates, been led to believe were based upon actual differences in operating and traffic conditions.

Following out the practice herein laid down, the Interstate Commerce Commission recognizes five zones, differing in traffic and in population density, and has adjusted rates with this difference in mind.

14. *Four standard tariffs.*—The standard tariffs are four in number. Tariff A, applying east of Windsor and Sudbury, has a merchandise rate of 40 cents per 100 pounds for distances of 25 miles and under; from 26–100 miles, the rates are stepped irregularly 10 or 15 cents for each 25 mile group; from 101 to 200 miles, the rate steps are 25 cents for each 50 mile group; and beyond this, up to the limit of the tariff at 2,000 miles, the rates are stepped 25 cents for each 100 mile group. Since the grouping is more complicated in tariffs B and C, it may be expressed in a tabular summary:

TARIFF B, WHICH COVERS 3,400 MILES:

Up to 25 miles, merchandise rate of 50c.

26 to 75 miles,	25 mile groups, rate steps either 10c. or 15c
76 to 110 miles,	25 mile groups, rate steps 25c.
111 to 210 miles,	50 mile groups, rate steps 25c.
211 to 330 miles,	60 mile groups, rate steps 25c.
331 to 400 miles,	70 mile groups, rate steps 25c.
401 to 700 miles,	75 mile groups, rate steps 25c.
701 and beyond,	100 mile groups, rate steps 25c.

TARIFF C, WHICH COVERS 4,000 MILES:

20 miles and under, merchandise rate of 50c.

21 to 75 miles, 15 mile groups, rate steps either 10c or 15c.

76 to 150 miles, 25 mile groups, rate steps 25c.

151 to 350 miles, 40 mile groups, rate steps 25c.

351 to 400 miles, 50 mile groups, rate steps 25c.

401 and beyond, 100 mile groups, rate steps 25c.

Tariff D, which is concerned with Vancouver Island, covers 135 miles. Up to 100 miles, there is a 25 mile group; there are ten or fifteen cent increases up to 75 miles and a 25-cent step on the next group. Beyond 100 miles, there is one group with a rate step of 25 cents.

The following summary compares certain of these rates:

	A	B	C	D
25 miles and under....	\$.40	\$.50	20 miles and under, \$.50	25 miles and under, \$.50
100 miles and under....	.75	1.00	1.25	1.00
1000 miles and under....	3.00	4.00	4.75	....

The Board found that in the traffic between the prairie section and British Columbia the practice was to make up a thru rate by adding the two tariffs together. In order to bring about uniformity and lessen the burden of rates, direction was given that on inter-division traffic which was not subject to the Sudbury basing schedule, or tariff mentioned below, the highest standard mileage scale, as applied to the thru mileage, should govern in either direction.

Between points east of Sudbury and points west thereof, thru rates were built up by adding to the local rate east of Sudbury a special basing tariff west

thereof, which latter is assumed to be lower than the Sudbury local tariff. Direction was given that the system might be continued, provided the thru rates were less in all cases than the sum of any tariff rates to and from Sudbury, and were not greater than the higher standard tariff as applied to the thru mileage from the point of origin to destination. The Sudbury basing scale is contained in the Dominion Express Company's local mileage basing tariff, Schedule "E." This sets out the specific rates for mileage west of Sudbury which, when added to the rates east and south of Sudbury, will give the thru rate to destination, except where the standard tariff west of Sudbury applied to the thru mileage gives lower thru rates.

15. *Local and transfer tariffs*.—Local tariffs set out the rate per 100 pounds between points, such rates applying either way. The rates are quoted specifically from point to point. As an example of this, reference may be made to the Dominion Express Company's Local Tariff No. 20. This applies on shipments between points in the Province of Quebec and points in Alberta and British Columbia. All points set out in the tariff are given rate numbers. If, for example, it is desired to find the rate per 100 pounds from Maniwaki, Quebec, to Walsh, Alberta, it will be found that the rate number for Maniwaki is 145, and for Walsh 700. In the rate schedules of the tariff, rate numbers are arranged along the head of each page, there is also a column of rate numbers

arranged horizontally on the left-hand side of each page. At the intersection of the column headed 145 with the horizontal line at the left of the page which has at its extreme left 700, the rate of \$6.25, which is the rate sought, will be found. The tariff in question in its 271 pages quotes rates from 566 initial points to 551 destinations.

When a shipment is to move off the lines of the originating express company to a point on the line of a connecting company for which no thru rate is quoted, the agent figures out the rate by means of a transfer tariff. This tariff sets out rates to basing transfer points. For example, a shipment might be sent from Red Deer, Alberta, on the lines of the Dominion Express, to North Battleford, on the lines of the Canadian Northern Express. If there is no thru rate quotation, the rate shown in this tariff to Edmonton, as a transfer point, plus the Canadian Northern Express local beyond, will make up the thru rate. There is a chance for overcharge under such an arrangement, for in a particular case there may be a number of basing transfer points available with different rates. It is true that the instruction to the agent is to compute the rate by the basing transfer point, which gives the lowest thru rate. But in the hurry of shipment, the lowest combination may be overlooked.

16. *Rates as affected by quantity.*—In general, the factors which affect express rates are more clearly analogous to those affecting passenger rates than to those affecting freight rates. From the standpoint of

cost of service, the difference between the capitalization in ordinary freight business and that in express service is attributable to the fact that the former is a transportation business, while the latter is more of an agency business. The charge of the latter is, therefore, not necessarily looked at from the standpoint of the return on capital invested, but from that of profit on the turnover.

While competitive conditions, such as water and market rivalry, exercise an important effect on freight rates, with express rates the case is different. Water competition certainly cannot be said to influence in any way a service the essential of which is speed; nor is the express service influenced in nearly the same degree as freight by the question of competitive points.

In general, the factors that affect passenger business apply here also. Express companies do recognize a difference of condition between their "exclusive," or non-competitive, points, and points at which there is competition with another express company. They recognize at competitive points the effect of short-line mileage as well as the control over a two-line movement of a single-line haul. The Canadian Express carries from Toronto to Welland, a distance of 85 miles, at a rate of 75 cents per 100 pounds. The Dominion Express and the American Express, a two-line movement, meet this rate of 75 cents. Fenwick, a point which is seven miles short of Welland and thru which the movement on the two-line haul

passes, has a rate of 90 cents. The lower rate to Welland has been held justifiable as a competitive rate, while at the same time the higher rate of the two-line haul to the intermediate point has been recognized. It has been recognized that in express, as in freight, there is a justification for a reasonably higher rate on a two-line haul than on a one-line haul, on account of cost and division of earnings. But at Welland the two-line movement had to meet the rate of the one-line movement.

17. *Freight rate as a basis.*—At times the expedited service afforded in express business has been expressed as a multiple of the first-class freight rate. Thus, in some of its earlier decisions on express rates, the Interstate Commerce Commission held that an express rate of three times the first-class freight rate was not unreasonable. In the contract entered into in 1907 between the Dominion Express Company and the Canadian Pacific Railway, it was provided that the express rate should be twice the first-class freight rate. In practice, however, no such necessary relation exists. In the case of the cream rates in Alberta, which were fixed by the Board, in various instances the express rate is less than the first-class freight rate. In the case of the fruit rates in British Columbia, which have been readjusted by the Express Company, the rate from a point in the Okanagan Valley—for example, Peachland—to such prairie points as Swift Current, Moose Jaw, Broadview, Regina, Saskatoon and Brandon, is less than the first-class freight rate.

18. *Special circulars*.—Commodity rates are put in force by special circulars quoting rates per hundred pounds. These may be limited to the one-way direction, or may apply "between" points; in the latter case they apply in both directions. The rates quoted in special circulars must not be exceeded by those to an intermediate point embraced in the longer distance for which the rate is quoted. Scale N rates apply when they are lower than the rates quoted in special circulars. Commodity rates are issued on fish (fresh, frozen, or cured), lobsters, oysters, fruit, butter, eggs, dressed poultry, general specials (Scale N), vegetables, sausage meat, meat (fresh or cured), smelts, export shipments of bullion, returned empty newspaper or periodical bags, bread, laundry, currency and gold coin. Competition is recognized in putting in a commodity tariff, as, for example, in a rate of 30 cents per 100 pounds on horses, minimum 10,000 pounds, from Clairmont to Toronto, to compete with a thru rate put in from a Canadian express point, Stouffville, to New York.

Instead of a division into car-lots and less than car-lots, as in freight traffic, we find in the express business:

(1) Car-lots, e.g., on horses and poultry.

(2) A rate quoted for 500-pound shipments of merchandise from one consignor to one consignee, forwarded at one time and on receipt. A shipment of less than 500 pounds cannot have a higher rate than a 500-pound shipment. Articles which will not be carried under the 500-pound scale are: aeroplanes

(K.D. boxed), animals (domestic or wild, either alive or dead), self-propelling vehicles, live stock, birds, poultry, pigeons, nickel and copper coin, bullion, feathers, live fish, ice-cream and, in general, any article of a higher classification than single merchandise rate. Broadly, the rate is about 20 per cent lower than the merchandise rate.

(3) The 100-pound rate on merchandise and,

(4) Packages under 100 pounds which are carried on the graduate scale.

19. *The graduate table.*—Approximately 90 per cent of the packages handled by express companies weigh 100 pounds or less. The Interstate Commerce Commission in its investigation found that approximately one-half of the express business consists of packages under 20 pounds in weight, and that the average shipment, including carloads of horses and of fruit and vegetables, is 34 pounds. To take the business of the Dominion Express Company for September 18, 1912, as an example—when a computation was made in which this same average was applied to the year's business, it appeared that 26 per cent of the revenue was obtained from parcels of 11 pounds and under. In the Express Investigation, it was shown that for a given month in 1907 the average weight of packages shipped into Toronto was 19 pounds, while in the case of outward shipments it was 43 pounds. For the years 1913, 1914 and 1915 the average weights per package were, in the case of the Dominion Express Company, 33.39, 35.86 and 36.27 pounds re-

spectively. In Eastern Canada, the average haul per package—i.e., all shipments—is about 100 miles, while in Western Canada it is not far from 300 miles.

The rates for packages under 100 pounds are worked out from a table of graduated charges, which is set out in the classification.¹ If—taking the example already given of a shipment between Maniwaki, Quebec, and Walsh, Alberta—it is desired to ship a 15 pound package between these points, the agent will look at the column, in the graduated table, headed \$6.25, which is the merchandise rate for a 100 pound shipment between the points. Then he will look down that column until at the left-hand side of the page he finds the 15-pound line; where this line intersects the \$6.25 column, the proper rate, viz., \$1.45 will be found. The graduated table has the following modifications to be noted: under the \$1.50 rate, shipments in excess of 50 pounds pay two cents per pound, with a maximum of \$1.50; while under the \$1.75 rate they pay the same rate per pound, with a maximum of \$1.75. As has been indicated, when the merchandise rate is \$2 or over, the shipment in excess of 50 pounds is charged pound rates.

20. *Rates not uniform.*—Scrutiny of the graduate table will show that the rates are not built up on a scientific basis. The effect of the 100 pound rate is not carried down uniformly thru the columns of rates. For example, under the \$1 merchandise rate, the charge for 60 pounds is 90 cents; 40 pounds, 70

¹ See specimen on the following pages.

TABLE OF GRADUATED CHARGES FOR SHIPMENTS WEIGHING LESS THAN 100 LBS.

When rate per 100 lbs. is \$		.40	.50	.60	.75	.90	1.00	1.25	1.50	1.75	2.00	2.25	2.50
Packages not over 1 lb.		1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25
Over 1	"	2 " 25	2 " 25	2 " 25	2 " 30	2 " 30	2 " 30	2 " 30	2 " 30	2 " 30	2 " 35	2 " 35	2 " 35
"	"	3 " 25	3 " 25	3 " 30	3 " 30	3 " 30	3 " 30	3 " 35	3 " 35	3 " 35	3 " 40	3 " 45	3 " 45
"	"	4 " 25	4 " 25	4 " 30	4 " 30	4 " 30	4 " 35	4 " 35	4 " 40	4 " 45	4 " 50	4 " 50	4 " 55
"	"	5 " 25	5 " 25	5 " 35	5 " 35	5 " 35	5 " 40	5 " 40	5 " 40	5 " 50	5 " 50	5 " 55	5 " 60
"	"	6 " 30	6 " 30	6 " 35	6 " 35	6 " 35	6 " 40	6 " 45	6 " 50	6 " 55	6 " 60	6 " 60	6 " 65
"	"	7 " 30	7 " 30	7 " 35	7 " 35	7 " 35	7 " 40	7 " 45	7 " 50	7 " 55	7 " 60	7 " 65	7 " 70
"	"	8 " 30	8 " 30	8 " 35	8 " 35	8 " 35	8 " 40	8 " 45	8 " 50	8 " 55	8 " 60	8 " 65	8 " 70
"	"	9 " 30	9 " 30	9 " 35	9 " 40	9 " 40	9 " 45	9 " 50	9 " 55	9 " 60	9 " 70	9 " 75	9 " 75
"	"	10 " 30	10 " 30	10 " 35	10 " 40	10 " 40	10 " 45	10 " 50	10 " 55	10 " 60	10 " 70	10 " 75	10 " 75
"	"	15 " 30	15 " 30	15 " 35	15 " 40	15 " 45	15 " 45	15 " 55	15 " 60	15 " 65	15 " 75	15 " 80	15 " 85
"	"	20 " 30	20 " 30	20 " 35	20 " 40	20 " 45	20 " 50	20 " 60	20 " 70	20 " 75	20 " 85	20 " 90	20 " 100
"	"	25 " 35	25 " 35	25 " 40	25 " 45	25 " 50	25 " 55	25 " 65	25 " 75	25 " 85	25 " 100	25 " 105	25 " 110
"	"	30 " 35	30 " 35	30 " 40	30 " 45	30 " 50	30 " 60	30 " 70	30 " 80	30 " 90	30 " 100	30 " 110	30 " 115
"	"	35 " 40	35 " 40	35 " 45	35 " 50	35 " 55	35 " 65	35 " 75	35 " 85	35 " 100	35 " 100	35 " 113	35 " 125
"	"	40 " 40	40 " 40	40 " 45	40 " 50	40 " 55	40 " 70	40 " 80	40 " 90	40 " 100	40 " 100	40 " 113	40 " 125
"	"	45 " 40	45 " 40	45 " 50	45 " 55	45 " 60	45 " 75	45 " 90	45 " 100	45 " 100	45 " 100	45 " 113	45 " 125
"	"	50 " 50	50 " 50	50 " 55	50 " 60	50 " 65	50 " 85	50 " 100	50 " 100	50 " 100	50 " 100	50 " 113	50 " 125
"	"	55 " 60	55 " 60	55 " 60	55 " 70	55 " 80	55 " 90	55 " 100	55 " 100	55 " 100	55 " 100	55 " 113	55 " 125
"	"	60 " 65	60 " 65	60 " 70	60 " 75	60 " 85	60 " 90	60 " 110	60 " 110	60 " 110	60 " 110	60 " 113	60 " 125
"	"	65 " 70	65 " 70	65 " 75	65 " 80	65 " 90	65 " 100	65 " 115	65 " 115	65 " 115	65 " 115	65 " 118	65 " 125
"	"	70 " 75	70 " 75	70 " 80	70 " 85	70 " 95	70 " 100	70 " 125	70 " 125	70 " 125	70 " 125	70 " 125	70 " 125
"	"	75 " 80	75 " 80	75 " 85	75 " 90	75 " 100	75 " 100	75 " 125	75 " 125	75 " 125	75 " 125	75 " 125	75 " 125
"	"	80 " 85	80 " 85	80 " 90	80 " 95	80 " 100	80 " 100	80 " 125	80 " 125	80 " 125	80 " 125	80 " 125	80 " 125
"	"	85 " 100	85 " 100	85 " 100	85 " 100	85 " 100	85 " 100	85 " 100	85 " 100	85 " 100	85 " 100	85 " 100	85 " 100

When the rate is \$2.00 or over per 100 lbs. charge Pound rates for 50 lbs. or more.

Over 50 lbs. to 100 lbs. charge 2 cents per lb., but not more than \$1.50.

Over 50 lbs. to 100 lbs. charge 2 cents per lb., but not more than \$1.75.

When rate per 100 lbs. is $\frac{1}{2}$		2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25
Packages not over		1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 25	1 lb. 30	1 lb. 30	1 lb. 30	1 lb. 30
Over 1	"	2 " 35	2 " 35	2 " 35	2 " 35	2 " 35	2 " 35	2 " 35	2 " 35	2 " 35	2 " 35	2 " 35
" 2	"	3 " 45	3 " 45	3 " 45	3 " 45	3 " 45	3 " 45	3 " 45	3 " 45	3 " 45	3 " 45	3 " 45
" 3	"	4 " 55	4 " 60	4 " 60	4 " 60	4 " 60	4 " 60	4 " 60	4 " 60	4 " 60	4 " 60	4 " 60
" 4	"	5 " 65	5 " 65	5 " 65	5 " 70	5 " 70	5 " 70	5 " 75	5 " 75	5 " 75	5 " 75	5 " 75
" 5	"	6 " 70	6 " 70	6 " 75	6 " 75	6 " 75	6 " 80	6 " 80	6 " 85	6 " 85	6 " 90	6 " 90
" 6	"	7 " 75	7 " 75	7 " 80	7 " 80	7 " 80	7 " 85	7 " 85	7 " 90	7 " 95	7 " 100	7 " 100
" 7	"	8 " 75	8 " 75	8 " 80	8 " 85	8 " 85	8 " 90	8 " 90	8 " 90	8 " 95	8 " 100	8 " 105
" 8	"	9 " 75	9 " 80	9 " 85	9 " 90	9 " 90	9 " 95	9 " 95	9 " 95	9 " 100	9 " 100	9 " 110
" 9	"	10 " 75	10 " 80	10 " 85	10 " 90	10 " 95	10 " 100	10 " 100	10 " 100	10 " 105	10 " 110	10 " 110
" 10	"	15 " 85	15 " 90	15 " 95	15 " 100	15 " 105	15 " 110	15 " 110	15 " 115	15 " 120	15 " 125	15 " 125
" 15	"	20 " 105	20 " 110	20 " 115	20 " 120	20 " 120	20 " 125	20 " 125	20 " 130	20 " 135	20 " 140	20 " 145
" 20	"	25 " 115	25 " 120	25 " 125	25 " 130	25 " 135	25 " 140	25 " 145	25 " 150	25 " 155	25 " 160	25 " 165
" 25	"	30 " 125	30 " 130	30 " 140	30 " 150	30 " 155	30 " 160	30 " 165	30 " 170	30 " 175	30 " 180	30 " 185
" 30	"	35 " 130	35 " 140	35 " 150	35 " 160	35 " 165	35 " 170	35 " 180	35 " 190	35 " 195	35 " 200	35 " 215
" 35	"	40 " 135	40 " 140	40 " 150	40 " 175	40 " 180	40 " 185	40 " 195	40 " 200	40 " 215	40 " 225	40 " 240
" 40	"	45 " 135	45 " 150	45 " 165	45 " 175	45 " 185	45 " 200	45 " 210	45 " 225	45 " 235	45 " 250	45 " 260
" 45	"	50 " 135	50 " 160	50 " 165	50 " 175	50 " 185	50 " 200	50 " 215	50 " 225	50 " 235	50 " 250	50 " 265

cents; 20 pounds, 50 cents; 10 pounds, 45 cents. It is urged by the express companies that the expenses in connection with collecting, delivering, handling and for clerical work are practically the same on the small shipment as on the large shipment. Further, the 100 pound shipments are normally made by firms which will supply the express wagon with a large amount of such shipments on one wagon-trip; the wagon mileage necessary is accordingly cut down.

There is considerable force in this contention. At the same time, in view of what has been said as to average size of shipment, the pressure of the graduate table on the rates for the smaller-sized package is apparent.

In the express investigation, it was found that only some twenty-nine rate columns were given in the graduate table and that when the rate between any two points was not given the next higher rate was to be used in arriving at the rate on the particular package. When there was a considerable gap between rates, this condition meant a very considerable added rate burden, and so direction was given that graduates had to be added under all the 100 pound merchandise rates. There are now 72 rate columns in the table.

21. *Single thru rates*.—In the matter of thru rates on packages moving over two lines, and subject to the rates of the graduate table, the practice had been to graduate once on each of the local rates. By an order issued in November, 1911, the express companies were directed to apply a "single" graduate. The effect of

this requirement is as follows: suppose a ten-pound shipment is moving on a thru movement, the locals for which on the merchandise rate are \$1 and \$1.50 respectively. Graduating on each local rate there would be a charge of 45 cents and 75 cents, or \$1.20. With the single graduate on the \$2.50 rate, the charge is 75 cents. When the graduate was made on the sum of the locals, there really was included in the rate charges a payment for four terminal services, instead of two as at present.

The effect of the reduction in western rates, already referred to, whereby a reduction of 20 per cent in the standard rates was directed, affected not only the merchandise rates and the special scale for shipments of 500 pounds, but also the quantities of less than 100 pounds moving under the merchandise rate and scales K and M.

REVIEW

What is the difference between the service of express companies and that of ordinary freight carriers? Explain how the express agent is said to act as the "customer's agent."

What was the date, the nature and the extent of the beginning of the modern express service? When were the present great express companies founded, both in the United States and in Canada?

What percentage of the gross earnings of the express companies is paid to the railways? What must the Dominion Express Company charge per hundred pounds?

Describe the nature of relations between an express company and the railways. Give some of the provisions of an agreement between them.

Into what two broad classes are express shipments divided; what sub-classes? What is the basis of the classification?

What are the express company's limitations as to liability?
Is it liable for the negligence of the railway?

What are the standard mileage tariffs; local and transfer tariffs? How are they built up?

What are commodity rates? What is the graduate table?
How are rates fixed on packages of less than one hundred pounds.
What competitive conditions affect express rates?

CHAPTER XVIII

INLAND WATER TRANSPORTATION

1. *Water transportation as a regulator of rates.*—In dealing with the factors affecting railway rates, various examples have already been given of the influence exercised by water carriers on rail movements. In general, when there is competition between these two methods of transportation, the rail rate can exceed the water rate only to the extent that it gives superior facilities. The following are characteristic disadvantages of water transportation: marine insurance—the rail carrier is an insurer; liability to salt water damage; longer time in transit, and consequent greater interest on capital invested; uncertainty in date of arrival, etc. We should consider, also, the general convenience that the railway affords, which is estimated as worth a premium of at least five per cent over water rates.

The efficiency of water competition on inland waters is affected by the location of cities and towns. Where these are adjacent to the water, the competitive effects are more readily felt. But even in the case of points some distance inland, for example, thruout the western peninsula of Ontario, the effect of the water route is felt. To cite a particular example, on the all-rail

movement of coal to London there is the competitive effect of the across-the-lake movement to Port Stanley and thence to London.

2. *Efficiency of waterways.*—Inland waterways differ in point of efficiency. The lakes and navigable waters are public highways accessible to all. Canals require larger investments of capital, but are still common highways, on which the individual may use his own vessel. The practice in Canada, as now accepted, is to have canal construction carried on at public expense as a charge against the taxing power of the country. Canals on a route aid in determining the maximum efficiency of that route. The same thing is true in the case of dredging, as in the St. Mary's River and thru the St. Clair flats. Just as the governing grade of a railway, in a division, determines in practice the hauling efficiency of an engine (no matter what may be its maximum tractive efficiency) thru the division, thereby affecting the costs of haulage, so it is the shallowest part of a water route that governs the loading efficiency of the route.

3. *Canal terminals.*—In the development of canals independent of great waterway systems an exceedingly important matter is the location of the terminals in the various towns and cities they serve. One disadvantage the English combined canal and waterways systems have is that their terminals are so located in large cities that it is cheaper to haul by rail direct to destination, as well as more convenient, than to pay the water charge and the wagon haul thru

the city to destination. In the cities, businesses engaged in distribution grow up adjacent to the railway terminals, and in many cases have railway sidings where delivery is taken. If it costs 25 cents a ton to haul coal by wagon from the canal terminal to the coal yard, and if the canal toll is 3 mills per ton per mile, the total charge is equivalent to the cost of hauling the coal 83 miles on the canal.

4. *Obligations of vessel carriers.*—The liability of railways has been defined and extended. In the case of vessel carriers, the obligations at common law in the absence of express contract are defined as follows by Carver, in his treatise on the "Law relating to Carriage of goods at Sea":

(1) To carry and deliver the goods in safety, answering for all loss or damage which may happen to them while they are in his hands as a carrier,

(2) Unless caused by some Act of God, or of the King's enemies, or by some defect or infirmity of the goods themselves or their packages, or thru a voluntary sacrifice for the general safety; and

(3) That these exceptions are not to excuse him if he has not been reasonably careful to avoid or guard against the cause of loss or damage; or has met with it after a departure from the proper course of the voyage; or if the loss or damage has been due to some unfitness of the ship to receive the cargo, which existed when he commenced the voyage.

5. *Scope of statutory provisions on water carriage.*—The statutory provisions concerning water carriage of goods are contained in the Dominion legislation of 1910, which applies to the water carriage of goods

from one port in Canada to any other port in Canada, or from any port in Canada to any port outside of Canada.

6. *Exemptions prohibited in bill of lading.*—Provisions in a bill of lading exempting from liability for loss or damage to goods arising from neglect, lack of proper loading, stowage, custody, care or delivery, are prohibited. So, also, is any limitation of the obligation of the owner or charterer of a ship to exercise due diligence to man, equip and supply the ship properly, and make and keep it seaworthy, and make and keep the hold and other portions thereof fit and safe for the reception, carriage, and preservation of goods.

7. *Due diligence.*—When the owner of a ship exercises due diligence to see that it is in all respects seaworthy and properly manned, equipped and supplied, neither the owner, agent nor charterer is responsible for loss or damage resulting from faults or errors in navigation, or in the management of the ship, or from latent defect.

8. *Limited liability.*—Liability is limited to \$100 a package, unless a higher value is stated in the bill of lading or other shipping document. The company is not liable for loss or damage if the nature or value of the goods has been falsely stated by the shipper, unless such false statement has been made by inadvertence or error. The declaration by the shipper in regard to the nature and value is not conclusive evidence against the owner, charterer, master or agent of the vessel.

9. *Contents of bill of lading.*—Every owner, char-

terer, master, or agent of any ship carrying goods must, on demand, issue to the shipper a bill of lading showing, among other things, the marks necessary for identification, as furnished in writing by the shipper, the number of packages or pieces, the quantity or weight, and the apparent order and condition of the goods as delivered to or received by such owner, charterer, master or agent. Such bill of lading is to be *prima facie* evidence of the receipt of the goods as therein described.

10. *Dangerous shipments must be declared.*—A shipment of goods of inflammable or explosive nature, or of a dangerous nature, without full declaration in writing of the nature of the shipment and the receipt of permission from the agent, master or person in charge of the ship, is subject to a fine of \$1,000.

11. *Railway bill used on Lakes.*—The bill of lading covering package freight movements on the Lakes, used by the Canada Steamship Lines, is the Railway Bill as approved by the Board in 1909.

12. *Provisions of grain bills of lading.*—The grain bill of lading issued by the Canadian Pacific Steamship Company for lake movement, exempts the company from loss or damage caused by the dangers of navigation, by any delay, or by fire, heating, accidents, storms, weather, an act of God, etc., or from deficiency in weight.

It is further provided that the Company is not liable for loss or damage occurring in any other manner without negligence on the company's part. Claims

for loss or damage are to be made in writing within twenty-four hours after delivery or arrival at terminal point. Under the Rail Bulk-Grain Bill, a period of four months after delivery, or in case of failure to make delivery, within four months after a reasonable time to make delivery, is allowed.

Under the Lake Grain Bill, the loss or damage for which the company is to be responsible is to be computed on the value or the cost of the grain at the place and time of shipment. It seems that it holds itself liable only if there is negligence. In the case of the Rail Bulk-Grain Bill, there are added to the computation of value for settlement the freight charges, if paid, or the duty, if paid, or payable and not refunded; and it is provided that this rule shall apply whether the loss or damage occurs from negligence or not.

13. *General liens.*—Under the lake bill, the company has a general lien not only for the back charges, carriage, storage, wharfage, demurrage, etc., attaching to the property specifically concerned, but also for any general balance that may be due the company from the consignor or the consignee of such property, and all charges must be paid before the property is delivered. Under the Railway Act, the right to seize is limited to the tolls due on the specific goods seized.

14. *What constitutes complete delivery.*—According to the Lake Bill, when the company receives goods consigned beyond the places at which the Company has stations, it is to be regarded as making complete de-

livery by giving notice to a public carrier that the Company is prepared to deliver the shipment for further conveyance. And the Company is not to be responsible for any loss, misdelivery, damage or detention of property carried by it, if such loss, etc., shall occur after such property shall have arrived at the station or place on the Company's line nearest to the place to which it was consigned. The Rail Bulk-Grain Bill has the same provision in regard to movements under a joint tariff as is set out in Section 3, Chapter XV.

15. *Canadian lake and canal route.*—From the head of Lake Superior to Montreal the distance by the water route is 1,214 miles. From Duluth and Chicago to the same point, the water distances are 1,336 and 1,240 miles, respectively. Of the distance between Port Arthur and Montreal, the canals to be traversed represent $73\frac{1}{2}$ miles, i.e., lockages are involved in six per cent of the total route.

The Canadian "Soo" Canal has a lock 900 feet in length and 21 feet 5 inches in depth. The vessels passing thru it can move, without breaking bulk, to the foot of Lake Erie. East thru the Welland Canal and the St. Lawrence canals to Montreal, the governing locks are 270 feet in length and 14 feet in depth.

This canal determines the cargo load and type of vessel using the lower portion of the route, and differentiates the type of vessel in use on it from that used between Lakes Superior and Erie. In general, on

the lower portion of the route, a vessel 255 feet in length, 42 feet 6 inches wide, drawing 13 feet and carrying 2,212 tons of cargo may be regarded as typical.

16. *From Georgian Bay to Montreal.*—Consideration of the short-line movement between Georgian Bay and Montreal has led to an awakening of public interest in the Georgian Bay Canal route which would, in the movement from Fort William to Montreal, have a distance advantage over the route of the Welland Canal of 362 miles. Surveys of the route on the basis of a minimum depth of 22 feet have been made by the Dominion Government, and an investigation of its commercial possibilities has been undertaken. The proposed depth would enable a lake vessel to go thru from the Upper Lakes to Montreal.

In comparing this route with existing or projected routes, the question of the elevation to be overcome is of importance. Between Georgian Bay and Montreal there are 440 miles of navigation. Natural channels are available for 80 per cent of this distance. To reach the summit level 639 feet of lockage will be necessary. By the Welland Canal route only 534 feet of lockage are necessary. The Georgian Bay route, as a factor in the general traffic of the lakes, may be compared with the much discussed deepening of the Mississippi River, which is intended to afford a traffic outlet from Lake Michigan to the Gulf of Mexico. This proposed deep waterway would have a distance of 1,625 miles between its termini.

It is true that the estimated cost of a deep waterway by this route does not call for more than \$40,000,000, or less than half of the cost of the Georgian Bay route. But there must also be considered the nature of the stream; its tortuous course, which is 60 per cent longer than the direct distance; and the constant expenditure on dredging which would be necessitated by the large amounts of silt carried down by the river.

While the Georgian Bay project is feasible from an engineering standpoint, the important question is its probable traffic future. The saving in time, because of the shorter distance, and the consequent reduction in rate may be expected to attract traffic. On the basis of a movement of four miles per hour thru the canalized portion of the route, vessels would move from Georgian Bay to Montreal in seventy hours, giving an advantage of from one and one-half to two days over existing routes. This calculation is based, however, on the conditions affecting the existing fourteen-foot waterway by way of the Welland Canal.

The Welland Canal is being reconstructed to permit the passage of the Upper Lakes vessels. If the St. Lawrence route to Montreal were deepened to twenty-two feet, it is probable—except for the traffic conditions already mentioned—that the Georgian Bay Canal would have no advantage in point of time. The deepening of the Lower Lake and the river canals and the increase in the size of the locks

would lessen the amount of lockage. At the same time, the longer stretches of lake and river navigation would permit higher average speeds than would be possible on the northern route.

17. *Ottawa system*.—The canals of the Ottawa system, with locks 200 feet long and 9 feet in depth, are of limited importance. On the Rideau Canal system, the locks are 124 feet long and 5 feet deep; while on the Richelieu system they are 200 feet in length and 7 feet deep. The Trent Canal, which is intended to connect Georgian Bay and the eastern end of Lake Ontario, affords a tortuous water route six times as long as the direct land route. The governing depth is five feet. The route is being constructed for the use of barges. Among its other disadvantages as compared with the Welland Canal route is the fact that it has five hundred feet more of vertical lift.

18. *No canal tolls*.—From an early date the construction of improved transportation ways in Canada, both water and rail, has looked to participation in the trade of the western states adjoining the Great Lakes. Until 1902 tolls were charged on the various canals. Since 1903 tolls have not been charged. The advantage of increased traffic, as reacting on the general business of Canada, is expected to compensate for this additional charge on the general revenue of the country.

Thruout, the aids to navigation and the deepening

of harbors are charged against the general revenues of the country.

19. *Great Lakes traffic.*—A tremendous volume of freight and vessel tonnage has developed on the Great Lakes. Without comparing values, it may be said that in seven and a half months of the year there passes thru the two canals at Sault Ste. Marie three times the vessel tonnage that goes thru the Suez Canal in a year. When to this there is added the vessel tonnage between Lakes Huron and Michigan on the one hand, and Erie on the other, the result may be measured by the statement that during the season of navigation a vessel passes Detroit every six minutes. The number of vessels passing Detroit is ten times greater than the number passing thru the Suez Canal. The freight tonnage passing Detroit is greater than the aggregate of all the cargoes borne by all the ships, British and foreign, entering the ports of Great Britain in a year.

20. *Traffic on the Upper Lakes.*—Of the traffic on Canada's inland waters, that of the Upper Lakes is the most important. In 1912 the movement thru the Welland and St. Lawrence Canals represented, respectively, seven per cent and six per cent of the total movement thru the Canadian canals; the movement thru the Canadian "Soo" Canal was 83 per cent of the total. A changed condition is represented by the figures of 1915. The opening of a new and larger lock on the United States side of the St.

Mary's River deflected some 19 millions of tons from the Canadian "Soo" canal. Over 90 per cent of this was United States traffic which used the Canadian Canal as a matter of convenience. The percentages for this year were Welland Canals, 20; St. Lawrence Canals, 22; and the "Soo" Canal, 50. Of the total capital expenditure on canals since Confederation, four-fifths has been on the "Soo," Welland and St. Lawrence Canals. Between 1909 and 1912, the freight traffic passing thru the Canadian "Soo" Canal increased by 42 per cent. In the same period, the traffic passing thru all Canadian canals increased by 41 per cent. Of the increase, 62 per cent was attributable to the "Soo" Canal. As has been indicated, a deflection of traffic to the American "Soo" canals decreased the total. The total tonnage passing thru the Canadian canals fell from 52.3 millions in 1913 to 15.1 millions in 1915. The traffic of the "Soo" Canal decreased by 82 per cent; the traffic through the Welland Canal decreased by 15 per cent; while the traffic through the St. Lawrence Canals decreased by 21 per cent.

A significant fact in the development of lake transportation has been the increasing importance of the Upper Lakes. The great increase in the traffic passing through the "Soo" canals is one index of this. With the development of the United States, the westward movement of grain centers and the expansion of population have lessened the transportation importance possessed by the Lower Lakes in the early days

of the Canadian canal system. In the United States, the center of wheat production has moved west and north. In Canada, the more recent development of the wheat areas of the Northwest has intensified the significance of this northward and westward pull. The transportation significance of these changes is that all the shortest lines of communication from the Northwest to the seaboard lie across Canada.

The diversion of ore tonnage to the United States "Soo" canals is primarily responsible for the changed percentages of 1915.

21. *Character of freight.*—In the general traffic of the lakes, iron ore, coal and grain are of most importance. The figures for the season of 1913—a very active traffic year—show the movement by percentages thru the "Soo" canals as follows:

	East-Bound	West-Bound
Iron ore	81.2	....
Grains, including flour	16.26	....
Lumber	1.65	....
General merchandise .....	.69	6.66
Copper .....	.14	....
Building stone, sand, pig-iron, etc. ....	.04	....
Coal .....	....	90.84
Manufactured iron .....	....	1.85
Salt .....	....	.53
Miscellaneous .....	....	.15

The distribution of traffic by percentages for the Canadian "Soo" Canal, the Welland, and the St. Lawrence in 1915 was as follows:

	Agricultural products	Animal products	Manufac- tures	Products of forests	Products of mines
"Soo" Canal..	34.26	.15	5.69	1.15	58.75
Welland Canal	42.68	.03	10.46	10.08	36.75
St. Lawrence Canals	35.32	.45	8.11	17.34	38.78

The traffic handled thru the Canadian canals, expressed in percentages, is given in the following table:

	1910 per cent	1911 per cent	1912 per cent	1913 per cent	1914 per cent	1915 per cent
Agricultural products.	10.2	14.2	14.51	16.40	21.51	34.11
Animal products.....	1.2	.1	.04	.04	.04	.07
Manufactures	5.2	6.2	4.68	3.61	3.29	7.21
Products of forests...	3.9	4.0	3.43	3.22	4.38	9.83
Products of mines....	79.5	75.5	77.73	76.34	70.78	48.78

REVIEW

To what extent does water transportation regulate freight rates? What affects the efficiency of inland water transportation?

What liabilities do shipowners assume for the freight they carry? How do the different bills of lading modify these liabilities?

Describe the Georgian Bay canal route to Montreal.

What commodities constitute the bulk of the traffic on the Great Lakes?

CHAPTER XIX

GRAIN AND OTHER TRAFFIC ON THE GREAT LAKES

1. *Questions connected with grain traffic.*—With the expanding grain traffic of the Northwest, various important traffic questions arise. There is not only the question of what proportion is lake borne, but the further question as to what routes it takes. The nature of the movement to the head of the lakes with its concentration of a large movement in a relatively short space of time has an important bearing not only on the transportation system but also on the fortunes of wheat-growing. In 1913, the grain shipments out of Fort William and Port Arthur in the months of October and November were 44 per cent of the total for the year. As is pointed out in Mr. Sanford Evans' interim report on the Georgian Bay Canal, the method of marketing grain in Western Canada is "to thrust forward sharply, immediately after the harvest, the greater part of the surplus, reserving something for a second 'thrust' about the following May." It further happens that the heavy marketing of wheat from Western Canada tends to happen at periods when the demand of the United Kingdom is relatively light. It, therefore, follows that the rushing forward of grain which is necessitated by credit

conditions, lack of farm storage, etc., breaks the price.

2. *Capacity of elevators.*—There are in Manitoba, Saskatchewan, Alberta, and Ontario, west of Fort William, elevators and warehouses with a capacity of 106.9 million bushels. There are at Fort William and Port Arthur terminal elevators with a capacity of 43 million bushels. In Ontario, there are public elevators with storage capacity of 18.3 millions while Quebec and the Maritime Provinces have respectively storage capacities of 8.4 and 2.5 million bushels.

It is this chain of elevators thru which the grain works to the seaboard either for domestic or for export consumption.

3. *Methods of doing business under Grain Act.*—In 1912, the "Canada Grain Act" took the place of "The Manitoba Grain Act," which had been enacted in 1910 and which was concerned with the supervision of the grain industry. Under the Grain Act, there are three methods of doing business—merchant, warehouseman, and factor or agent. The first includes the track buyer and country elevator where the dealer exercises his function in buying grain outright; the second, includes the terminal elevator and the country elevator in the exercise of its function of doing a storage business only; and the third includes all commission merchants. Under the law, the terminal elevator is limited to the business of a warehouseman, i.e., it cannot deal in grain.

4. *Licenses and Inspection.*—The public function performed by the elevators is subject to a licensing

and inspection system under the Board of Grain Commissioners, a body of three men appointed to carry out the enforcement of the Grain Act. Licenses are subject to bonds being given to cover the financial responsibilities incident to the type of business engaged in.

5. *Causes for car shortage.*—In the handling of grain forward from the producing point, the initial relation with the railway begins when application is made for cars and the entry therefor placed in the car order book. Difficulties in respect of car shortages may arise from causes for which the railways are responsible, from difficulties for which shippers elsewhere are responsible by holding cars under load, or from difficulties attributable to the volume of the crop.

So long as the present limited storage facilities exist upon the farm—the causes for this being in many cases the limited financial resources of the farmer—wheat-farming will be a cause of constant heart aches to the smaller producer. Mixed farming is being much discussed and a fair start has been made in Alberta. From the railway standpoint, one advantage of mixed farming will be a more economical utilization of rolling stock and a steadier and a more efficient transportation service, since there will be a diffused burden instead of a sharply concentrated peak load.¹

¹ The general description given is summarized from the lectures by Mr. Piper, of the Empire Elevator Company, before the Manitoba Agricultural College.

6. *Documents in grain shipments.*—The cars are billed forward from the shipping station under the bulk grain bill of lading, which is made out in duplicate. The original bill when receipted by the railway becomes the commercial bill of lading which is used in financing against the grain. The duplicate bill is the railway's record. The face of the bill shows the shipping station, to whose order, to what station and terminal elevator the grain is shipped, who is to be advised of its inspection and its outturn on unloading, the kind of grain and the approximate quantity. The duplicate bill remains at the shipping station. The local station agent copies out the instructions from the bill of lading on a separate paper known as the "way-bill." This document goes forward with the shipment, under the custody of the conductor of the train.

There are four documents representing one car; (1) the bill of lading; (2) the inspection certificate issued in Winnipeg; (3) the elevator outturn; (4) the official weight certificate issued at Fort William.

The surrender of the warehouse receipt properly indorsed is a condition precedent to the shipment of grain. The receipt thus surrendered is sent to the Government registrar for cancellation, so completing his records. The canceled receipt is returned by him to the elevator company, in this manner completing its record.

7. *Statutory grades of grain.*—The cars are shipped under seal. Provision is made for Govern-

ment sampling en route, in order to establish the grade. A train of from forty to forty-five cars can be sampled in one hour. The statutory grades of grain are 1 Hard, 1 Northern, 2 Northern and 3 Northern. The statute also provides for further subdivision under the headings of commercial grade, no grade, rejected, condemned. The commercial grades, usually three in number, are established yearly by a body of experts known as the "Standards Board," appointed by the Grain Commission. This Board meets once a year, usually in October, at Winnipeg, to fix the commercial grades for the new crop. "No grade" means grain which has excessive moisture, being tough or damp. "Rejected" grain is that which is unsound, musty, dirty, smutty or sprouting, or which contains large admixtures of other kinds of grain, seeds, or wild oats, or which from any other cause is unfit to be classed under any of the recognized grades. "Condemned" grain is grain which is in a heating condition, or is badly bin-burnt.

Since the identity of grades has to be preserved at the terminal points by binding together in the public terminal elevators all grain of the same grade, it is manifest that in a season when there is great subdivision of grades the efficiency of the general elevator facilities is much lessened and the railway movement impeded.

8. *Special charges.*—In addition to the thru railway rate, there may be special charges covering, e.g., bulkheading, where a charge of one cent per hundred

pounds is made to cover damage to the car due to partitions being built therein to separate different kinds or grades of grain; stopover, one cent per hundred, this being charged when car is stopped in transit and its contents unloaded and reloaded; a diversion charge of \$3; and demurrage.

9. *Utilization of elevator facilities.*—An economical utilization of the elevator facilities at the head of the lakes is effected in connection with the movement eastward through the Lake Shippers' Clearance Association. It is in effect a voluntary clearing-house. A shipper may have delivered to him warehouse receipts covering grain located in various terminal elevators. Instead of having to go thus, perhaps, thru all the elevators, the Association, thru the exchange of warehouse receipts of others similarly situated, may be able to concentrate the cargoes in one or two elevators.

10. *Analysis of grain movement.*—As one of the great problems of the Canadian Northwest has been concerned with rushing the grain to the lakes before the close of navigation, the problem of how and to what extent the movement from the head of the lakes is water-borne is important.

The movement of Canadian wheat thru the Canadian "Soo" Canal has grown from one million bushels in 1895 to 48.7 millions in 1915, the high point having been reached in 1913 when 101 million bushels passed thru the Canal. There is also to be considered the flour movement. Converting barrels of flour into

wheat at the ratio of $4\frac{1}{2}$ bushels to the barrel, the following analysis of the movement of Canadian wheat thru the Canadian and United States "Soo" Canals is available for 1915. The figures show that 180 millions of bushels passed through the two canals:

	Thru Canadian canal	Thru U. S. canal
Wheat, in bushels	48,727,911	121,389,950
Flour (converted into bushels)	7,974,035	1,933,906

The movement of Canadian wheat, exclusive of flour, shipped from Lake ports thru the Canadian and United States "Soo" Canals for a period of years is given in percentages, in the following summary:

From Port Arthur, Fort William and Duluth, To—	1913	1914	1915
Montreal	10.7	10.8	2.4
Georgian Bay ports	18.4	26.2	14.9
Other Canadian ports	20.5	36.2	19.4
Buffalo	50.4	26.8	63.3

In 1909, the percentage movement to Buffalo was 29 per cent. The movement to Georgian Bay ports has decreased from 27.9 per cent, and the movement to other Canadian ports also has decreased.

11. *Grain traffic diverted to United States.*—Mr. Evans' report, already referred to, points out that the traffic diversion to United States routes appears to be concerned with the two seasonal peaks of the grain business of Western Canada, that is, the regular movements tended to be by Canadian routes, the surplus moving over United States' routes.

The distribution of the movement is indicative of the importance of short-rail route methods of communication with the seaboard, either across Ontario or via Buffalo. Of the 18.3 million bushels of elevator capacity in the public elevators of Ontario, east of Port Arthur Bay ports, the distribution in point of capacity is as follows: Georgian Bay ports, 55.3 per cent; other Canadian ports i.e., Lake Huron and Lake Erie to Port Colborne, 33.3 per cent; east of Port Colborne, 11 per cent.

12. *Upper Lake Traffic encourages specialized vessel construction.*—The relatively simple nature of the traffic of the Upper Lakes and the large bulk of the individual items thereof have encouraged specialized vessel construction. Grain and flour furnish a considerable amount of cargo for the smaller vessels, such as the wooden steamers in the three hundred and three hundred and fifty foot classes. Lumber is handled to a large extent by wooden steam barges which tow loaded barges. Schooners are also to some extent still engaged in this traffic. It is in the traffic in ore, grain, and coal that the large bulk freighters are used. In this traffic, the tramp or "wild" boats are of importance as a regulative factor. Tank boats are also used in the carriage of oil—for example, by the Imperial Oil Company—to the head of the lakes, where supplies of oil are stored to be shipped on further west in the winter season.

13. *Package freight.*—The package freight of the lake includes general merchandise, such as silks and

woolen fabrics and manufactured goods, canned goods, fine furniture, bar iron and steel, etc. Here the traffic is carried mostly by line boats. The rates of the line boats are usually lower than those of the rail carriers by an agreed difference. While the Northern Navigation Company and the Dominion Transportation Company enter into thru rate arrangements with railways, there are various thru all-water independent lines operating to the head of the lakes, e.g., the Inland Lines operating from Montreal, Toronto, and Hamilton to Sault Ste. Marie, Ont., and Fort William; the Canadian Lake Line; and the Merchants' Mutual.

14. *Influences affecting lake rates.*—The rates on lake-borne traffic are affected by the bulk of the movements and the specialized types of construction. The balance between the traffic in different directions is also a factor in influencing rates. For example, the large bulk of cargo moving east thru the "Soo" canals leaves a large amount of empty vessel space moving westward to handle this cargo. This in turn reacts on the rates on west-bound coal, the only traffic-offering in large amount moving westward.

15. *Load factor in lake traffic.*—An instructive analysis of the load factor in lake traffic is contained in the interim report on the Georgian Bay Canal, published in 1916. In the movement eastward thru the Canadian and the United States "Soo" canals in 1913, there were carried 2.03 tons of cargo for every net registered ton of vessel capacity. On the trips

west-bound, the amount averaged about one-third. Both the east-bound and the west-bound traffic movements are regular, and do not show the same extreme peaks as appear in the rail-borne grain traffic.

In the case of traffic of United States origin, the ratio was 2.09 to 1; while in the case of traffic of Canadian origin the disparity was much greater, the ratio being 7.91 to 1. This disparity between the Canadian and the United States movements is due to the much greater bulk of traffic-offering west-bound in the case of traffic of United States origin. In the case of Canada, the bulk of grain moving eastward is the predominating factor. The traffic of Canadian origin, from Lake Superior, is not so equally distributed as is the United States traffic. The iron ore from the ore ranges of Minnesota moves forward with fair regularity. The rushing forward of the Canadian grain before the close of navigation makes a peak load. In October, 1915, there were loaded out by water from Fort William and Port Arthur 52,850,000 bushels of grain.

In the traffic with Lake Huron and Georgian Bay ports, Canadian vessels carried 5.26 tons east-bound for 1 west-bound. In the traffic with Lake Michigan, which is of minor importance, the bulk of the movement was westward, the ratio here being 1 eastward to 2.15 westward. From the standpoint of comparative utilization of vessel space, the most satisfactory movements are to Lake Ontario and St. Lawrence River ports, where there were 1.76 tons east-bound to

1 west-bound, and to Lake Erie ports where the ratio is 1.09 to 1.

16. *Movement of traffic.*—An analysis of the traffic of Canadian origin moving in either direction gives the following percentage distribution:

	East-Bound	West-Bound
To or from Lake Erie	54.04	3.09
To or from Lake Michigan	1.38	....
To or from Lake Huron and Georgian Bay	32.89	45.81
To or from Lake Ontario and the St. Lawrence River	11.68	51.09

As bearing on the traffic fortunes not only of the proposed Georgian Bay Canal but also of the expansion of the existing canal system, a percentage analysis showing the direction of the movement of the total traffic, whether of Canadian or of United States origin passing in either direction thru the "Soo" Canals, is of value:

	East-Bound	West-Bound
To or from Lake Erie	83.48	94.07
To or from Lake Michigan	10.77	1.59
To or from Lake Huron and Georgian Bay ports	4.14	2.14
To or from Lake Ontario and the St. Lawrence River ports	1.61	2.18

17. *Formation of Canada Transportation Lines, Ltd.*—In June, 1913, an amalgamation was formed to control various freight and passenger services, whereby a new company with a capital of \$25,000,000, the Canada Transportation Lines, Limited, took over

the Richelieu and Ontario Navigation Company, the Inland Lines, Northern Navigation Company, St. Lawrence River Steamboat Company, Quebec Steamboat Company, Canada Interlake Line, Ontario and Quebec Navigation Company, Merchants' Montreal Line, S. S. Haddington, Thousand Island Steamboat Company.

The Richelieu and Ontario Company already controlled by purchase, or by stock ownership, the Inland Lines, Northern Navigation Company, Niagara Navigation Company, St. Lawrence River Steamboat Company, Thousand Island Steamboat Company and Merchants' Montreal Line. The Quebec Steamship Company operated a service between Quebec and the maritime provinces, as well as between Quebec, New York and the West Indies. The Canada Interlake Line had already consolidated the interests operating under the name of the Merchants' Mutual Line. The consolidation is now known as the Canada Steamships Limited.

18. *Advent of large vessels.*—In 1898, the construction of a vessel 475 feet long for the Bessemer Steamship Company, an American lake boat company, was hailed as marking an epoch in lake shipbuilding. Today there are 600-foot freighters, and even larger vessels are not unknown. Such boats, while monstrosities from the standpoint of naval architecture, have great carrying capacity. The "J. Pierpont Morgan," which is 605 feet 5 inches in length, can carry in a single voyage a cargo equal to

the combined cargo capacities of every vessel afloat on Lake Superior in 1861. On the day this boat was launched, its captain declared that it could carry in a single voyage as much ore from Duluth to Cleveland as the first steamer he had commanded twenty-eight years before could have carried in two years and a half.

While a boat of this type is built so that it can carry nearly 21,000 tons of freight, the channels in the Detroit, St. Clair, and St. Mary's rivers limit its effective carrying capacity to about 14,000 tons. In the loading, management and unloading of such a vessel, mechanical appliances are freely used. It is operated economically at a speed of from 11 to 12 miles per hour, with a coal consumption of 5 pounds for each 100-ton mile, about one-fourth of the consumption required for the performance of the same work by a railway. A 600-foot ore boat can be loaded by the use of ore docks in 2 hours and unloaded in from 5 to 10 hours. An ore boat returning light can make 30 round trips in a season between Superior and Cleveland. If it takes back coal, it can make 20 round trips.

19. *Loading and unloading.*—The loading and unloading of grain can be carried on with great expedition. At the new government elevator at Fort William, 100,000 bushels can be unloaded from the cars in an hour, while a 600-foot boat can be loaded in less than 4 hours. In one day in 1912, fourteen boats took on at Fort William and Port Arthur

3,000,000 bushels of grain. At the end of September, 1913, one grain train came into Winnipeg with 68 cars of wheat, or 76,500 bushels. From Winnipeg to the head of the lakes, the trains average about 41 cars. This means that one 600-foot boat can take on nine such train loads. In the case of the 3,000,000 bushels loaded in one day, this was equivalent to 65 train loads.

The largest Canadian lake freighter, the "W. Grant Morden," was launched in April, 1914. The vessel is 625 feet long, 59 feet beam, and 32 feet deep. She has an estimated carrying capacity of 580,000 bushels of wheat. On September 17, 1914, this vessel carried out of Fort William a cargo of 451,214 bushels. This is the equivalent of 10 average grain trains. Assuming a Western township to have an average yield of 20 bushels per acre, this cargo equalled approximately 98 per cent of this yield.

When the grain arrives at Port McNicoll, for example, the Canadian Pacific port on Georgian Bay, it is found that the best average so far made is that of August 11, 1916, when there were unloaded 382,700 bushels in 13 hours. At the same time the railway loaded out 141 cars, or 229,100 bushels, in 10 hours.

20. *Combined inland and ocean traffic.*—It is at times urged that the improvement of the St. Lawrence canals—if this follows the improvement now under way on the Welland Canal—or the construction of the

Georgian Bay Canal, will enable ocean-going vessels to carry their cargo into lake ports, without breaking bulk, and receive there export freights. Without going into earlier experiences, reference may be made to the fortunes, in 1901, of the vessels built for the Counselmen Syndicate by the American Shipbuilding Company. Altho they journeyed under their own steam from Chicago to Europe, the venture was so unprofitable that it was given up after one season. The fact that the vessels could not load to their full depth of twenty feet until Montreal was reached was peculiar to the existing canal depth. In addition, they could not compete in cargo capacity with the larger vessels, either of the lakes or of the ocean. Their sailors were paid on the lake scale of wages, about twice as high as the ocean scale. In addition, the vessels were subjected to high insurance charges. The North Atlantic requires vessels to be of especially stout construction. The lake vessel is more lightly constructed. The stronger hulls, etc., needed for the ocean voyage add about 20 per cent to the cost. The lake vessel, on account of the smaller amount of coal needed to be carried, has greater cargo space in proportion to size than the ocean-going vessel. In general, the latter costs about twice as much per ton of cargo capacity as the former. A combined lake and ocean type of vessel would lack the economic advantages attaching to the more specialized type.

21. *Lake rates.*—Figures collected by the Rail-

ways and Canals Department give the following ton-mile rate data for wheat for the years 1913-1915, inclusive:

	1913	1914	1915
Fort William—Montreal . . . . .	.142	.124	.132
Fort William—Georgian Bay . . . . .	.148	.095	.282
Fort William—Other Canadian ports . . . . .	.104	.065	.124
Fort William—Buffalo . . . . .	.103	.061	.159

This may be compared with the all-rail ton-mile rate on grain, on the normal basis, from Fort William to Montreal, viz., .401 cents. On the lake rate to Montreal, in 1915, one ton would be moved 757 miles for one dollar, while all-rail the ton would be carried 248 miles. During the summer of 1916, there was a lower all-rail rate giving a ton-mile rate of .36 cents. On this a ton would be carried 277 miles for one dollar.

22. Ton-mile rate in water-borne and rail-borne traffic.—In making comparisons between the ton-mile rate on water-borne traffic and rail-borne traffic, it must be remembered that, in the ton-mile rate on the former, there is included no charge by way of contribution to the capital cost of the canals, as well as of the improvements in harbors and aids to navigation. It is a vessel rate only.

In the case of the rail rate, there is not only a payment for the out-of-pocket costs of the actual haulage movement; there is also, of necessity, a payment toward the maintenance and operation of the railway and a return on capital. Owing to the difference in factors concerned, the water ton-mile rate quoted is

not, in strictness, comparable with the rail ton-mile rate. The canal system has cost 113.9 millions of dollars. The maintenance charges on this in 1915 were 1.4 per cent. A computation has been made that, taking interest at $3\frac{1}{2}$ per cent on the capital and adding thereto maintenance charges, it will be found that this contribution figures out .146 cents per ton per mile. This does not take into consideration the cost of aids to navigation, harbor improvements, etc. Recognizing the limitations of the method used, it would appear that the corrected water ton-mile rate on grain, Fort William to Montreal, would be .272 cents. On this basis, \$1 would carry a ton 367 miles. The water haul from Fort William to Montreal is 1214 miles, approximately 18 per cent longer than the rail haul. On the basis of the mileage, it would, on the corrected water ton-mile rate, cost \$33.02 for a ton; while on the lowest rail ton-mile rate quoted, it would cost \$35.87. On the normal rail basis, it would be \$39.97. These comparisons are, of course, only approximate. The water hauls are on a cost basis, while the rail haul rate is presumed to contain some element of profit.

In 1912, figures corrected by the Department of Railways and Canals indicated that United States traffic using Canadian waterways, had a ton-mile rate of .067 cents against the Canadian traffic ton-rate of .194 cents. The computations are not now presented in this form.

The disparity between the Canadian and the American lake ton-mile rates indicates the difference in the

nature of the traffic, and has a bearing on the Buffalo movement of Canadian grain. The bulk of United States traffic carried thru Canadian waterways is concerned with iron ore and coal. Iron ore is carried down by the large freighters from the Minnesota iron ranges; coal is carried back. Expedition is desired so as to get the maximum number of trips in a season; coal can be loaded and unloaded by mechanical means. During 1912, the rate on ore from the points of origin on Lake Superior to the ports of destination on Lake Erie was 55 cents per ton, or .063 cents per ton-mile; on the return movement there is a large amount of empty cargo space, and coal is carried at exceedingly low rates—during 1912 at 30 cents per ton, or .046 cents per ton-mile.

23. *Variations on water-borne grain rates.*—In the matter of rates on water-borne grain, there are variations from year to year, as well as from season to season. In 1915, the average ton-mile rate from Fort William to Georgian Bay ports was .282, while the spread was .285 cents. In 1914, the average was .104, while the spread was only .094.

The following table gives the average ton-mile rate and spread for the year 1915:

	Average		Spread
Fort William-Montreal.....	.132	.089	(June and October)
Fort William-Georgian Bay.....	.282	.285	(July and December)
Fort William-other Canadian ports..	.124	.076	(July and December)
Fort William-Buffalo.....	.159	.140	(June and December)
Port Colborne-Montreal.....	.287	.113	(June and November)

24. *Comparison between lake and canal movements.*

—In 1913 and 1914 the ton-mile rates from Fort William to Buffalo were .103 cents and .061 cents respectively. These low average rates on traffic to Buffalo are, in the case of ore and coal, held down by a highly specialized traffic and the necessity of obtaining cargo for backloading on the westward and northward movement. The grain rates afford a more fairly comparable basis. In the movement to Buffalo, there is large bulk in large freighters. These are able to obtain some cargo on Lake Erie either of coal or a certain amount of package freight. In the movement thru the Welland Canal and on to Montreal, the physical features of the canal system limit the maximum thru cargo to 80,000 bushels, so the economies of bulk handling are not so largely present. The traffic may either go to Montreal or be transhipped at Kingston. In either case, there is the disadvantage that little west-bound cargo is offered on Lake Ontario.

In the lake movement, short trips with minimum coal consumption are the most profitable. Even in the case of a vessel which is able to pass thru the Welland Canal, the locking thru takes about nineteen hours. The same expenditure of time would, after delivering its cargo at the foot of Lake Erie, take it back as far as the Detroit River. Concerning the movement to Canadian points and the movement to Buffalo, it must also be remembered that while, for example, in 1912, in the carriage of grain between Canadian and United States ports, the average ca-

capacity of the Canadian boats was 102,000 bushels, in the same movement the average capacity of United States boats was 226,000 bushels. In 1915, the insurance rate on the insurable value of steel hulls, covering all risks from the head of the lakes to the foot of Lake Erie, was $3\frac{3}{4}$ per cent. An additional one-half per cent was charged on the movement east thereof to Ogdensburg, while an additional one-half per cent was charged on the movement east of Ogdensburg to Montreal.

REVIEW

Describe the methods of doing business under the "Canada Grain Act."

What are some causes of car shortage?

What documents are used in grain shipments?

Trace the development of grain shipments thru the "Soo" Canals. Why is the traffic being diverted to the United States?

What influences affect rates on lake traffic?

How has specialized traffic on the lakes affected the type of boats used?

Why have vessels built for combined lake and ocean service proved unprofitable?

What causes the disparity between Canadian and American lake ton-mile rates?

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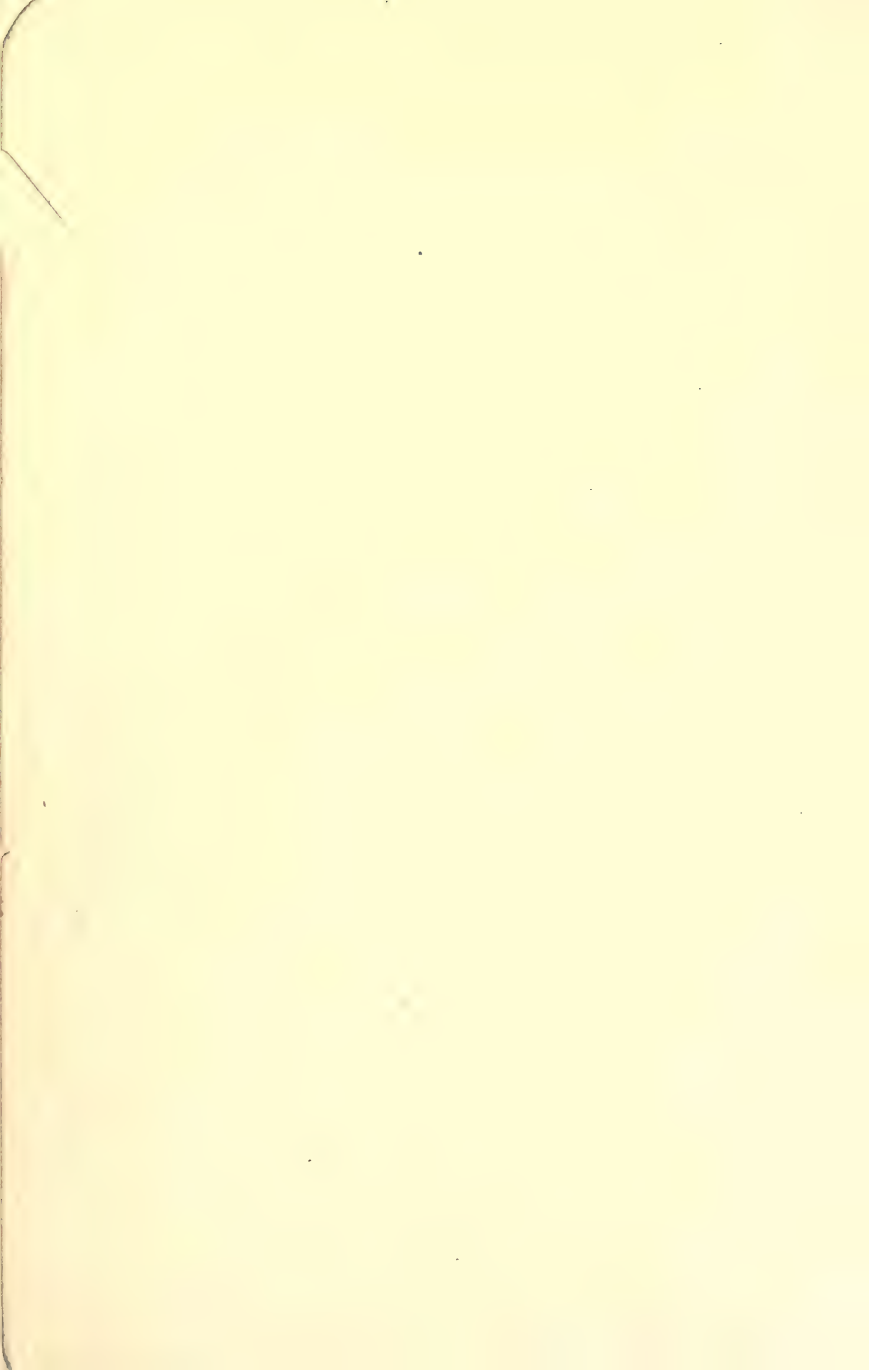
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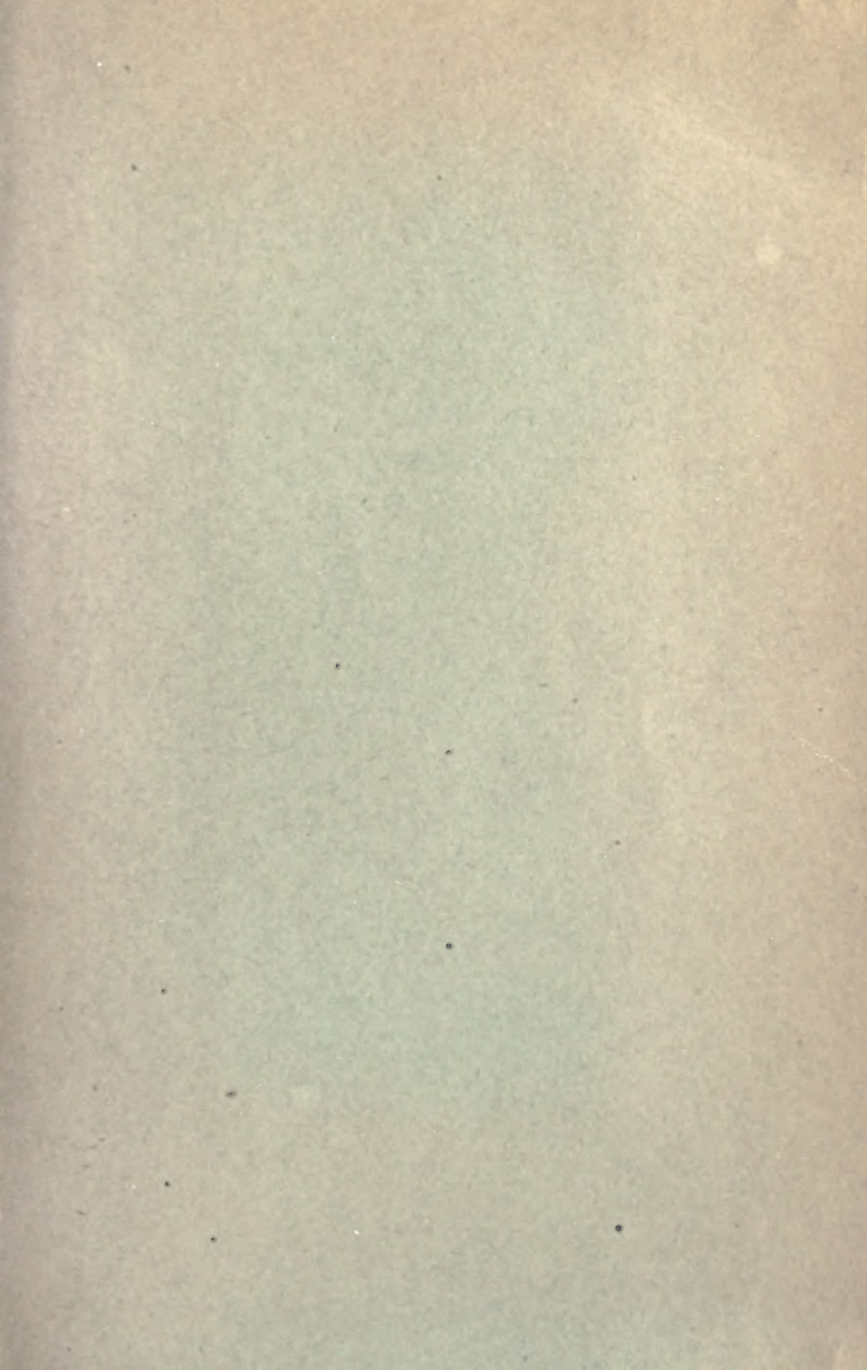
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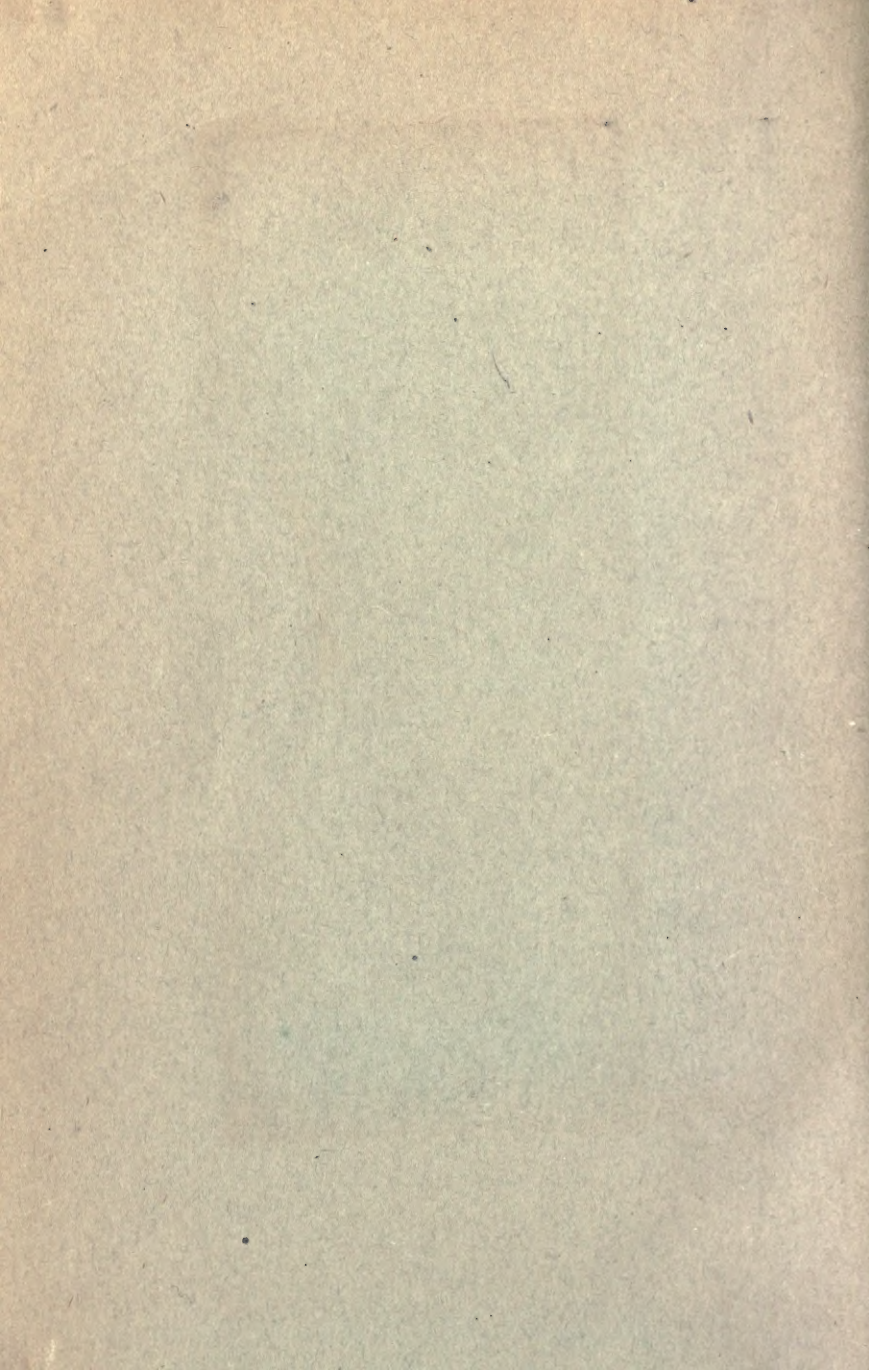
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